

REFRIGERATION DIRECTORY and MARKET DATA BOOK together with A NEW 112-PAGE SUPPLEMENT

AVAILABLE SOON (in paper binding) AT NEW LOW PRICE

"Will You Sell a Directory for 50 Cents?"

—Asked a Distributor

"Have you a DAMAGED 1932 Refrigeration Directory and Market Data Book which you will be willing to sell for 50c?" was the inquiry recently received from a Frigidaire distributor in an eastern state.

This request set us thinking. How many others would feel that they could better afford the Directory if it were considerably reduced in price from the original \$2.00? How much could we afford to reduce it?

The new supplement, which brings statistical information up-to-date and provides valuable new data, has involved considerable added expense and the printing of additional pages. But by binding the new enlarged Directory in paper rather than cloth covers and wire stitched instead

of hand-sewed, we have been able to save.

Feeling that the Directory should be in the hands of every individual who is identified with the manufacture or sale of refrigeration equipment, we have decided to offer this new edition at the lowest possible price.

Copies of the 1932 Refrigeration Directory and Market Data Book, inclusive of the new supplement may be obtained for fifty cents (in combination with new or renewal subscriptions to Electric Refrigeration News) and for only \$1.00 when bought separately.

Below you will find outlined some of the valuable information which you will find in the Directory and Market Data Book. Here is vital data—facts, figures and names—which you need.

What You Will Find In the New Directory Supplement

1. Trend of Distribution During 1932

Anyone who wants an overall and up-to-the-minute picture of industry developments and merchandising trends during 1932, should not miss the survey which Editor George F. Taubeneck has especially prepared for this Supplement.

This review reflects opinions and information obtained as a result of much traveling and wide contact with distributors and dealers as well as manufacturers all over the country. Written in the frank, engaging style which is characteristic of Mr. Taubeneck's editorials, it presents a comprehensive picture of the industry's progress during the past year.

2. Sales Statistics for 1932

This comprises a month-to-month tabulation of household and commercial refrigerator sales during 1932 as compiled by the Refrigeration Division of the National Electrical Manufacturers

Association. (Companies represented in the NEMA group include Copeland, Frigidaire, General Electric, Kelvinator (including Leonard), Norge, Servel, Trupar, Universal Cooler, Westinghouse, Majestic, Gibson and Crosley.) Also household electric refrigerator sales by the entire industry as estimated by Electric Refrigeration News after a special survey.

3. Specifications of Household Electric Refrigerators

Comprehensively presented covering 56 pages are the specifications of household electric refrigerators manufactured by 48 different companies. In response to a wide demand from distributors, dealers and salesmen, these specifications were first published in the May and June issues of Electric Refrigeration News and all manufacturers were invited to bring specifications up-to-date for the purpose of this Directory Supplement.

Some of the Directory Contents

Complete List of Manufacturers of Refrigeration Equipment, Parts, Materials and Supplies

All companies are listed in four different sections—alphabetical, trade name, classified and geographical. The classified section comprises 196 pages of complete information on all sources of supply for products and services used by the industry. The geographical section is the first complete list of refrigeration manufacturers to be issued in convenient geographical arrangement with names of executive officers.

Figures and Analyses of Refrigeration Sales

These figures cover a ten-year period and are broken down according to the major classifications of equipment.

Figures on Wired Homes

All states, counties and places of 2,500 population or over are covered with the estimated potential market for electric refrigerators in each community.

Sales Charts of Electric Appliances

These charts show the comparison of refrigeration sales with other household appliances and the relative saturation of the market.

Distributor and Dealer Survey

Here is presented the results of a merchandising survey based on confidential information concerning distribution methods of 497 distributors and 20,897 dealers.

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ON ARRIVAL

Merchandising Section

IN TWO PARTS
PART ONE

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

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9 MONTHS SALES OF HOUSEHOLD ELECTRIC REFRIGERATORS TOTAL 750,000

OVALLE BACKERS POLL LARGE VOTE IN G. E. CONTEST

Harrisburg Distributor
Takes Lead As End
Of Voting Nears

CLEVELAND—N. K. Ovalle, General Electric distributor of Harrisburg, Pa., and fighting aspirant to the chair of president of Refrigerania in the General Electric Monitor Top Election Campaign, which closes Friday, polled the greatest number of votes last week which have been turned in since the contest began. He rolled up a total of 55,527 votes, making him the leading candidate for the office of president.

Frank Wolf of Buffalo, mentioned last week as a "dark horse," turned in 68,768 votes, virtually securing a post in the cabinet. He moved up 16 places on the list routing A. Wayne Merriam, Albany, N. Y., distributor, from his position.

George Patterson, G. E. distributor in St. Petersburg, Fla., turned in approximately 20,000 votes last week, and forged ahead of Phil H. Harrison of Newark.

Other candidates who moved up on the list were Dorsey F. Hines, the Baltimore candidate for president who secured 29,920 votes, and moved from fourteenth to twelfth place; and Major Glueck of Kansas City, Mo., and Charles Gould of Syracuse, N. Y., who both moved up three positions.

Albert Ahrens of Oklahoma City, who has been in the lead for the presidency nearly all of the campaign, is now 3,300 votes behind Ovalle. Candidate W. L. "Bill" Thompson of Gentsch-Thompson, Inc., Boston, is less than 10,000 votes behind Wolf, and is working for a cabinet position.

A. S. Dunning, winner of last year's Monitor Top Electric Campaign, and president incumbent of Refrigerania, is eighth from the bottom of the list of candidates.

The campaign closes this Friday and from all indications there will be many more upsets when the ballots are counted and recounted after midnight of Nov. 5. Official tabulation auditors will be sent into the field to check up on all the leaders where there seems to be a reasonable chance that a mistake has been made, or where there is any dispute as to the leadership of the candidates.

Every possible sales help is being utilized this last week. The distributors are making use of the General Electric kitchen coaches, the Monitor bank, and the brooder in one last effort to secure the political offices of Refrigerania.

UNDERSTANDING OF PUBLIC TAUGHT BY DEPRESSION

By Phil B. Redeker

DETROIT—"When we emerge from the depression, industry and business will find that it has progressed, not in the direction of greater physical or mechanical perfection, but in a greater understanding of the great mass of people of how to serve these people as they want to be served," H. G. Weaver, market research specialist for General Motors Corp., told members of Detroit's Adcraft club here Oct. 28.

Marketing research has failed to keep up with mechanical research, Mr. Weaver pointed out.

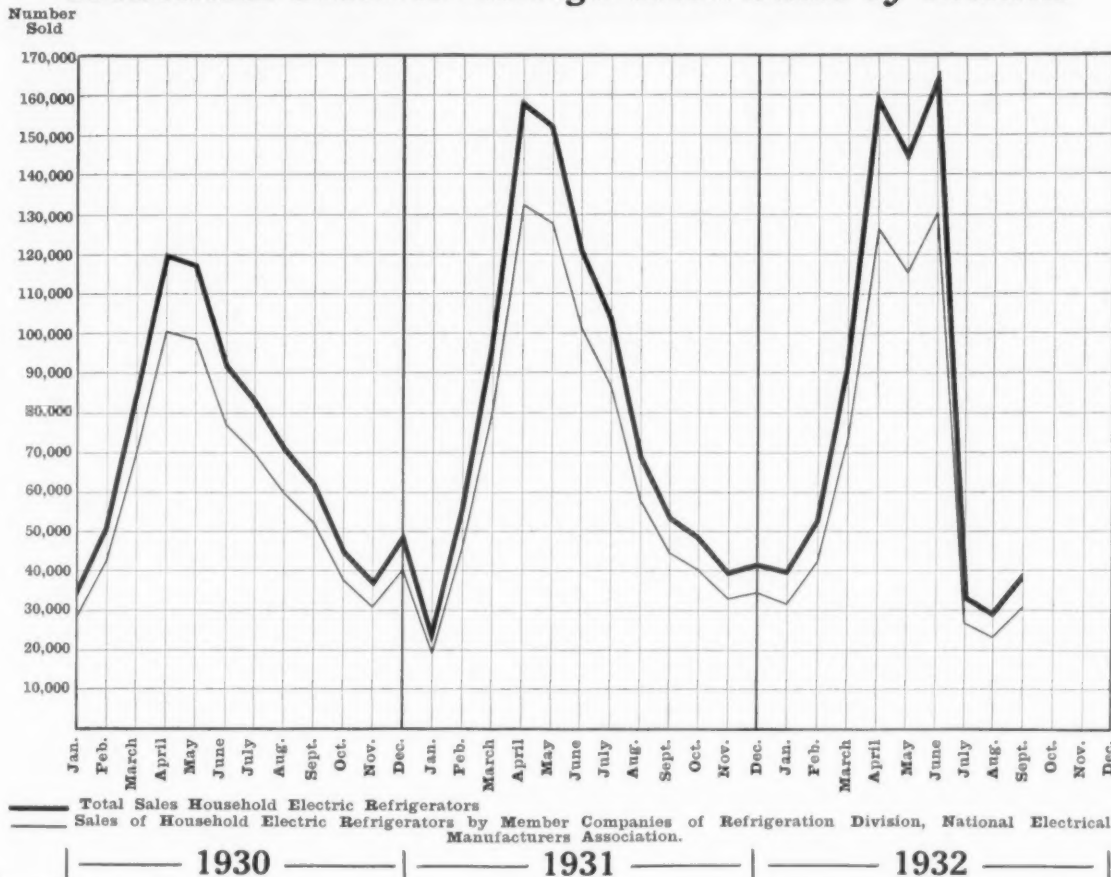
The old manufacturer, who produced and sold his goods from one

(Concluded on Page 12, Column 1)

MEYERS NAMED CREDIT HEAD OF KELVINATOR BRANCH

DETROIT—S. E. Meyers, formerly a member of the ReDisCo staff of the Kelvinator factory here, has been appointed manager of the credit department of the Kelvinator factory branch in New York City, according to C. M. Armstrong, vice president and manager of the Refrigeration Discount Corp.

Household Electric Refrigeration Sales by Months



SHIPLEY ELECTED BY MACHINERY BUILDERS

DETROIT—W. S. Shipley, president of the York Ice Machinery Corp., was elected president of the Refrigerating Machinery Association at the society's nineteenth annual meeting held at the Book-Cadillac Hotel, here, Oct. 20 to Oct. 22.

Mr. Shipley becomes the association's fourteenth president, the organization having been started in 1914. In his acceptance, Mr. Shipley expressed his desire to create better understanding among the various manufacturers represented in the association, and urged closer cooperation as a factor in promoting the purposes of the association.

The next scheduled meeting of the Refrigerating Machinery Association will be held at Hot Springs, Va., the third week in May.

RICHARDSON, MAYFLOWER DISTRICT MANAGER, DIES

WASHINGTON, D. C.—George Lawrence Richardson, southeastern district sales manager of Trupar Mfg. Co., Dayton, manufacturer of Mayflower electric refrigeration, died suddenly at his home here at the Cavalier Hotel, Friday, Oct. 1. He was 36 years old.

Death resulted from an infected tonsil. Mr. Richardson is survived by his widow, a sister in Merchantville, N. J., and a brother in New York City.

Leonard Announces National Sales Contest

DETROIT—A nation-wide retail sales contest will be held by the Leonard Refrigerator Co. between Nov. 1 and Dec. 15, according to A. M. Taylor, merchandising director of the company.

The salesman who shows the greatest number of properly notarized sales during the contest will receive \$100; the second high man, \$75; and third, \$50.

For each five units sold within a stipulated period of time, the salesmen will receive a model "B" Hamilton Beach Mixer. Under the plan, it is possible for a salesman to win a number of these mixers, which serve many kitchen purposes.

The plan of awards is as follows: For selling five Leonards between Nov. 1 and Dec. 15, one mixer will be awarded. For selling 10 Leonards during that period, two mixers. For 15 sales, three mixers.

Instead of one cash prize for each 15-day period of the contest, as was the practice in the Leonard sales contest last summer, the company is offering three.

For the first salesman who sends in his properly notarized report of five sales prior to Nov. 15, a check for \$25 will be written; for the second, a check for \$15; and for the third, \$10.

Second period prizes are doubled. To the first salesman who properly reports

(Concluded on Page 12, Column 4)

G. E. APARTMENT MEN TO CONVENE NOV. 28

CLEVELAND—The annual Apartment House Sales Managers' Conference of General Electric refrigerator and General Electric kitchen distributors will be held in Cleveland Nov. 28 and 29, according to George D. Kobick, manager of G. E. apartment house division.

In addition to apartment house sales managers from distributors, there will be present representatives of the Edison General Electric Appliance Co., Inc., General Electric Kitchen Institute, Walker Dishwasher Corp., and others.

A large portion of the meeting will be devoted to plans for the coordination of sales efforts on the General Electric kitchen.

CASWELL GETS ORDER FOR 24 G. E. ELECTRIC KITCHENS

DETROIT—The first and the largest complete General Electric kitchen installation in this part of the country will be started within less than a week in the Palmer Court Apartments here, according to Syd Caswell, G. E. distributor of this city.

The apartment, owned by Hiram Walker, of the Walker Distilleries in Walkerville, Canada, is undergoing complete renovation. Each of the 24 suites in this Jefferson Avenue building will

(Concluded on Page 12, Column 1)

TEN MAKES SELL 80% OR 600,000; ALL OTHERS 20%

Sales In Third Quarter
Show Sharp
Decline

By F. M. Cockrell

DETROIT—Three-quarters of a million household electric refrigerators—that is my best estimate of the total sales during the first nine months of 1932 by all manufacturers to distributors and dealers in the United States.

Nearly six hundred thousand, or 80 per cent of the total, represents sales of the companies holding membership in the Refrigeration Division of National Electrical Manufacturers Association (Nema) as follows: Frigidaire, General Electric, Kelvinator, Leonard, Norge, Servel, Grigsby-Grunow, Westinghouse, Copeland, Universal Cooler and Trupar. Gibson and Crosley are now members of Nema but their figures are not included in the Nema statistics.

The remaining 150,000 units, or 20 per cent of the total represents sales to dealers by all companies outside of the Nema group. It is possible that some executives may consider this figure to be too high. In support of this estimate, I will point out that two-thirds of this number, or 100,000 represents bona fide returns from non-Nema manufacturers covering sales made during the first six months only.

Right here I must admit that the response to my questionnaire requesting statistics for the first six months was not entirely satisfactory. While most of the important companies supplied the desired information, as is indicated by the total of approximately 100,000 units, a large number of small producers failed to reply. The real difficulty in completing the estimate, however, was due to the unwillingness to furnish data on the part of five or six companies whose output would affect the totals appreciably.

When direct returns could not be obtained, it was necessary to resort to information from suppliers of motors, controls, cabinets and other parts which would indicate very closely the probable output of these concerns. After much gumshoe work, I finally arrived at approximately 30,000 as a safe estimate of the six months sales by all companies which failed to reply.

The chances of error in this estimate are further reduced by the fact that the

(Concluded on Page 2, Column 1)

LOCAL BUREAUS TO HOLD CHRISTMAS EXHIBITIONS

NEW YORK CITY—A number of local electric refrigeration bureaus are planning December refrigeration shows as a pre-holiday activity, according to the National Electric Refrigeration Bureau.

Twenty-three local dealers in Richmond, Va., have signed up for an exhibit to be held in the Broad and Grace Arcade during the week of Nov. 29 to Dec. 2.

In Atlanta, 50 dealers have started preparations for a show to be held early in the month, while in Brockton, Mass., 10 dealers will participate in the Brockton bureau's show to be held in the display room of the Brockton Edison Co. the week of Dec. 5.

CANADIAN LEONARD SALES GAIN 312 PER CENT

LONDON, Ont.—Canadian sales of Leonard electric refrigerators for the last fiscal year showed an increase of 312.6 per cent in dollar volume over the year before, according to an announcement just made by P. A. Manross, assistant general manager of the Leonard Refrigerator Co. of Canada. The unit volume increase for the year was 187.7 per cent, he said.

Supplement to Directory Nears Completion

A supplement to the REFRIGERATION DIRECTORY and MARKET DATA BOOK of more than 100 pages of facts and figures on the refrigeration industry will soon be off the press. The supplement will be bound with the 1932 edition of the REFRIGERATION DIRECTORY in a paper cover and will be sold for \$1.00 per copy in the United States.

The supplements will contain the following features:

1. A review of the important trends in the industry for 1932, written by George F.

Taubeneck, editor of ELECTRIC REFRIGERATION NEWS.

2. Statistics for the refrigeration industry for the first nine months of 1932.

3. Specifications of 48 makes of household electric refrigerators.

4. Directory of manufacturers of air-conditioning equipment and component parts.

Additional information regarding the supplement will be found on page 8 of the Engineering (green) section.

NINE MONTHS SALES TOTAL 750,000 UNITS

(Concluded from Page 1, Column 5)

Information mentioned above accounts for approximately 20,000 out of the 30,000. For the first six months, therefore, the final allowance of 10,000 represents the possible sales of a considerable number of very small concerns.

In order to make an estimate of the nine months total for the non-Nema companies it is necessary to assume that they continued to maintain their 20 per cent volume during the third quarter of the year. During this period the Nema companies sold approximately 80,000 refrigerators and I am assuming that the non-Nema companies sold an additional 20,000, or a total of 100,000 for the third quarter. If this ratio is correct, then the estimate of 150,000 for the non-Nema companies during the entire nine months should not be far off. Adding this number to the Nema total of 600,000, we get a grand total of 750,000 for the entire industry.

Changes in Membership

An element of confusion to those who would compare Nema sales this year with those of previous years is caused by changes in the Nema membership. For example, Grigsby-Grunow (Majestic) sales are added into the Nema totals only since the beginning of 1932, while Tennessee Furniture (Cavaller) was not a member of the association after March of this year. The Nema sales of household units during the first nine months of 1931 amounted to 695,019 compared with 599,857 for the first nine months of 1932, which is nearly 100,000 less. If we may assume that Majestic sales (included in 1932 but not the previous year) were a substantial number, then it is evident that the volume of some of the Nema companies must be considerably below last year. Just who took the loss has not, of course, been made public.

If electric refrigeration sales by months were uniform throughout the year, then three-quarters of a million units sold during three-quarters of the year would indicate a final volume of the much-hoped-for million. A study of the actual curve of past performance, however, offers no hope of achieving any such quota. Although the industry was ahead of 1931 at the middle of the year, the severe slump in sales during the third quarter, put the nine months' total far behind that of the previous year. It is doubtful whether the fourth quarter of 1931 can be equalled and still less possible that the handicap due to the low third quarter can be overcome.

Lower Total for Year?

Reports indicate that sales have picked up during September and October but my present guess is that the total for 1932 will be at least 100,000 less than the 1931 record figure of 1931. Even if the industry succeeds in selling 850,000 electric refrigerators this year, it will be a remarkable demonstration of selling effort and consumer acceptance during this third year of the well-known depression.

In this connection it is interesting to note figures just released by R. L. Polk & Co. showing that 943,163 new passenger automobiles were sold during the first nine months of this year, compared with 1,652,089 registered during the same period of 1931. This represents a drop in passenger car sales of 42.91 per cent in spite of really prodigious efforts of automobile companies to revive their business.

Nema Statistics

DETROIT—September sales of household electric refrigerators as reported by the members of the refrigeration division of the National Electrical Manufacturers Association show an increase of 30 per cent over August, 1932. However, they are only 69 per cent of sales for September, 1931, and 59 per cent of the same month in 1930.

The total of 599,857 refrigerators sold in the first three quarters of 1932 is 82.6 per cent of sales made in the first three quarters of 1931.

Despite price reductions made early in the month of September by some of the leading manufacturers, dollar volume for September was up 26 per cent from August.

The combined stocks of household and commercial refrigeration equipment in dollar volume as held by factory, branch, and warehouse were the lowest in dollar volume at the end of September that they have been in the last three years. Distributors' and dealers' combined stocks were also the lowest that they have been in this period with two exceptions—January 31, 1932, and December 31, 1930.

Although stock figures have not been furnished by all the members of Nema the value has been arrived at by prorating the dollar volume reported according to the percentage of total sales made by the reporting companies.

The third quarter, in review, shows a considerable loss in both number of refrigerators sold and in dollar volume. Sales for this quarter were only 44 per cent and 42.5 per cent, respectively, of the same quarters in 1930 and 1931, while dollar volume was off to 35 per

Nema Sales—September, 1932

Reported by Refrigeration Division of National Electrical Manufacturers Association, Member Companies: Copeland, Frigidaire, General Electric, Kelvinator, Majestic, Norge, Servel, Trupar, Universal Cooler, and Westinghouse

As Billed to Distributors and Dealers, Including Exports

| Lowest Priced Cabinets | | | Systems Included | | Cabinets Only | |
|-------------------------|----------------------------|--------|------------------|------------|---------------|-----------|
| Net Food Space | | | Quantity | Dollars | Quantity | Dollars |
| 1. | Under 4.00 cu. ft. | 265 | 265 | 15,553.00 | 2 | 60.00 |
| 2. | 4 to 4.99 cu. ft. | 8,711 | 8,711 | 615,331.86 | 219 | 4,778.00 |
| 3. | 5 to 5.99 cu. ft. | 3,568 | 3,568 | 278,072.27 | 93 | 3,043.00 |
| 4. | 6 to 6.99 cu. ft. | 3,514 | 3,514 | 354,948.14 | 3 | 114.00 |
| 5. | 7 to 7.99 cu. ft. | 1,008 | 1,008 | 115,473.80 | 12 | 826.00 |
| 6. | 8 to 8.99 cu. ft. | 256 | 256 | 39,662.48 | ... | ... |
| 7. | 10 to 12.99 cu. ft. | 16 | 16 | 2,923.76 | ... | ... |
| 8. | 13 to 16.99 cu. ft. | 74 | 74 | 17,356.00 | ... | ... |
| 9. | 17 to 24.00 cu. ft. | 10 | 10 | 3,010.00 | 69 | 11,389.00 |
| 10. | Totals if Cabinets only | ... | ... | ... | 398 | 20,010.00 |
| 11. | Totals if Systems included | 17,822 | 1,442,331.31 | ... | ... | ... |
| Medium Priced Cabinets | | | Systems Included | | Cabinets Only | |
| Net Food Space | | | Quantity | Dollars | Quantity | Dollars |
| 21. | Under 4.00 cu. ft. | 635 | 635 | 53,491.10 | 4 | 82.00 |
| 22. | 4 to 4.99 cu. ft. | 2,199 | 2,199 | 183,570.08 | ... | ... |
| 23. | 5 to 5.99 cu. ft. | 2,065 | 2,065 | 217,777.29 | 3 | 114.00 |
| 24. | 6 to 6.99 cu. ft. | 3,672 | 3,672 | 439,151.74 | 83 | 2,627.00 |
| 25. | 7 to 7.99 cu. ft. | 594 | 594 | 71,445.79 | 12 | 1,169.00 |
| 26. | 8 to 8.99 cu. ft. | 1,206 | 1,206 | 215,194.00 | ... | ... |
| 27. | 10 to 12.99 cu. ft. | 506 | 506 | 110,161.50 | 24 | 2,171.00 |
| 28. | 13 to 16.99 cu. ft. | 50 | 50 | 13,068.00 | ... | ... |
| 29. | 17 to 24.00 cu. ft. | 25 | 25 | 8,597.00 | ... | ... |
| 30. | Totals if Cabinets only | ... | ... | ... | 126 | 6,163.00 |
| 31. | Totals if Systems included | 10,852 | 1,312,456.50 | ... | ... | ... |
| Highest Priced Cabinets | | | Systems Included | | Cabinets Only | |
| Net Food Space | | | Quantity | Dollars | Quantity | Dollars |
| 41. | Under 4.00 cu. ft. | ... | ... | ... | ... | ... |
| 42. | 4 to 4.99 cu. ft. | 82 | 82 | 8,498.00 | ... | ... |
| 43. | 5 to 5.99 cu. ft. | 71 | 71 | 8,591.00 | ... | ... |
| 44. | 6 to 6.99 cu. ft. | 185 | 185 | 32,843.00 | ... | ... |
| 45. | 7 to 7.99 cu. ft. | ... | ... | ... | ... | ... |
| 46. | 8 to 8.99 cu. ft. | 2 | 2 | 490.00 | ... | ... |
| 47. | 10 to 12.99 cu. ft. | 4 | 4 | 1,220.00 | 7 | 843.00 |
| 48. | 13 to 16.99 cu. ft. | 1 | 1 | 453.50 | ... | ... |
| 49. | 17 to 24.00 cu. ft. | ... | ... | ... | 3 | 723.00 |
| 50. | Totals if Cabinets only | ... | ... | ... | 16 | 2,516.00 |
| 51. | Totals if Systems included | 345 | 52,125.50 | ... | ... | ... |

Nema Stocks—September 30, 1932

| Systems Included | | | Cabinets Only | |
|-------------------------------|---------|--------------|-------------------------------|------------|
| Factory, Branch and Warehouse | | | Factory, Branch and Warehouse | |
| Quantity | Dollars | | Quantity | Dollars |
| 1. | 159 | 8,591.75 | 202 | 1,608.00 |
| 2. | 6,591 | 526,012.71 | 2,311 | 39,937.40 |
| 3. | 4,587 | 364,188.81 | 1,754 | 45,058.00 |
| 4. | 1,457 | 125,523.00 | 1,076 | 35,600.00 |
| 5. | 6,016 | 741,830.92 | 10,086 | 616,956.00 |
| 6. | 188 | 29,469.00 | 4 | 270.00 |
| 7. | 77 | 14,210.08 | ... | ... |
| 8. | 787 | 175,348.00 | 36 | 4,420.00 |
| 9. | 781 | 228,486.00 | 224 | 36,186.00 |
| 10. | ... | ... | 15,693 | 783,035.40 |
| 11. | 20,643 | 2,213,660.07 | ... | ... |
| 12. | 1,657 | 153,043.74 | 921 | 36,671.00 |
| 13. | 20,953 | 1,821,874.45 | 4,039 | 166,082.00 |
| 14. | 2,620 | 259,218.15 | 4,630 | 230,605.60 |
| 15. | 27,985 | 3,427,768.82 | 1,252 | 31,692.20 |
| 16. | 1,909 | 271,202.00 | 641 | 39,755.00 |
| 17. | 4,844 | 840,998.00 | 67 | 4,558.00 |
| 18. | 4,399 | 980,263.00 | 649 | 55,018.00 |
| 19. | 2,152 | 547,770.00 | 102 | 19,296.00 |
| 20. | 783 | 272,559.00 | 12,301 | 583,677.80 |
| 21. | 67,302 | 8,574,697.16 | ... | ... |
| 22. | ... | ... | ... | ... |
| 23. | 546 | 56,620.00 | ... | ... |
| 24. | 836 | 103,739.00 | ... | ... |
| 25. | 37 | 6,478.00 | ... | ... |
| 26. | 2 | 479.00 | ... | ... |
| 27. | 63 | 12,442.50 | ... | ... |
| 28. | 5 | 1,150.00 | ... | ... |
| 29. | ... | ... | ... | ... |
| 30. | ... | ... | ... | ... |
| 31. | 1,489 | 180,908.50 | ... | ... |

| Systems Included | | | Cabinets Only | |
|-------------------------------|---------|-----|-------------------------------|---------|
| Factory, Branch and Warehouse | | | Factory, Branch and Warehouse | |
| Quantity | Dollars | | Quantity | Dollars |
| 51. | ... | ... | ... | ... |
| 52. | ... | ... | ... | ... |
| 53. | ... | ... | ... | ... |
| 54. | ... | ... | ... | ... |
| 55. | ... | ... | ... | ... |
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| 77. | ... | ... | ... | ... |
| 78. | ... | ... | ... | ... |
| 79. | ... | ... | ... | ... |
| 80. | ... | ... | ... | ... |
| 81. | ... | ... | ... | ... |
| 82. | ... | ... | ... | ... |
| 83. | ... | ... | ... | ... |
| 84. | ... | ... | ... | ... |
| 85. | ... | ... | ... | ... |

Line 85 prorated to correspond with total sales of 10 companies \$19,490,614.00 \$10,074,745.00
No. of Mfrs. reporting on Line 85, their % of total sales: 9 Mfrs.—96.80%, 6 Mfrs.—76.20%
*Shows number of manufacturers reporting on items above line 85 in these double columns, also the % of total sales for the month made by these companies

cent and 32 per cent of corresponding periods.

Only 13.4 per cent of the total sales for the year to date were made in this quarter as compared to 30.3 per cent in the third quarter of 1930, and 27.2 per cent in the same period of 1931.

While commercial dollar volume is off 57 per cent and 47 per cent of the third quarters of 1930 and 1931 it is encouraging to note that it was not hit as badly as was the household dollar volume during the third quarter.

Throughout 1932 commercial sales have followed the seasonal curve at approximately this same level as compared to

previous years, while the dollar volume of household business, up to the third quarter, had been only 10 to 20 per cent behind other years. But in the third quarter, as pointed out above, household dollar volume is off 65 per cent and 68 per cent, respectively, from the third quarters of 1930 and 1931.

The attached tabulation shows how buying has been shifting from the higher-priced cabinets to the lower-priced models. In January 52 per cent of the sales were in the highest priced group, while in September only 1 per cent of the sales are in the highest priced group.

Sharp Drop in Third Quarter Sales Compared With Previous Years

HOUSEHOLD LOW SIDES

| Month | 1930 | 1931 | 1932 |
|---------------|---------|---------|--------|
| July | 69,506 | 86,419 | 26,794 |
| August | 59,680 | 58,021 | 23,124 |
| September | 51,969 | 44,262 | 20,513 |
| Third Quarter | 181,155 | 188,702 | 80,431 |

HOUSEHOLD DOLLAR VOLUME

| Month | 1930 | 1931 | 1932 |
|---------------|--------------|--------------|-----------------|
| July | \$ 8,784,389 | \$11,417,435 | \$ 2,640,502.78 |
| August | 7,265,463 | 7,460,159 | 2,318,045.18 |
| September | 6,017,410 | 5,511,450 | 2,933,434.70 |
| Third Quarter | \$22,067,262 | \$24,389,044 | \$ 7,892,332.66 |

COMMERCIAL LOW SIDES

| Month | 1930 | 1931 | 1932 |
|---------------|--------|--------|--------|
| July | 19,276 | 17,624 | 7,558 |
| August | 15,289 | 11,564 | 6,412 |
| September | 12,283 | 8,059 | 5,082 |
| Third Quarter | 46,848 | 37,245 | 19,052 |

COMMERCIAL DOLLAR VOLUME

| Month | 1930 | 1931 | 1932 |
|---------------|--------------|--------------|-----------------|
| July | \$ 2,503,265 | \$ 2,500,619 | \$ 1,091,789.29 |
| August | 2,219,447 | 1,544,295 | 881,092.85 |
| September | 1,519,567 | 1,050,788 | 717,942.20 |
| Third Quarter | \$ 6,242,278 | \$ 5,095,703 | \$ 2,690,834.34 |

Value of Stocks on Hand Lowest In Three Year Period

Factory, Branch and Warehouse Stocks (Dollar Volume)

| Month | 1930 | 1931 | 1932 |
|-----------|--------------|--------------|-----------------|
| January | \$57,200,000 | \$27,400,000 | \$29,374,102.62 |
| February | 45,000,000 | 32,200,000 | 35,673,473.00 |
| March | 45,000,000 | 35,000,000 | 35,130,703.00 |
| April | 27,600,000 | 25,250,000 | 34,039,211.00 |
| May | 22,900,000 | 24,700,000 | 30,302,144.00 |
| June | 22,550,000 | 22,900,000 | 23,497,000.00 |
| July | 19,600,000 | 20,400,000 | 24,177,176.00 |
| August | 21,800,000 | 20,700,000 | 21,480,603.00 |
| September | 19,500,000 | 20,000,000 | 19,490,614.00 |
| October | 20,500,000 | 20,067,000 | ... |
| November | 21,300,000 | 22,805,110 | ... |
| December | 21,700,000 | 27,100,168 | ... |

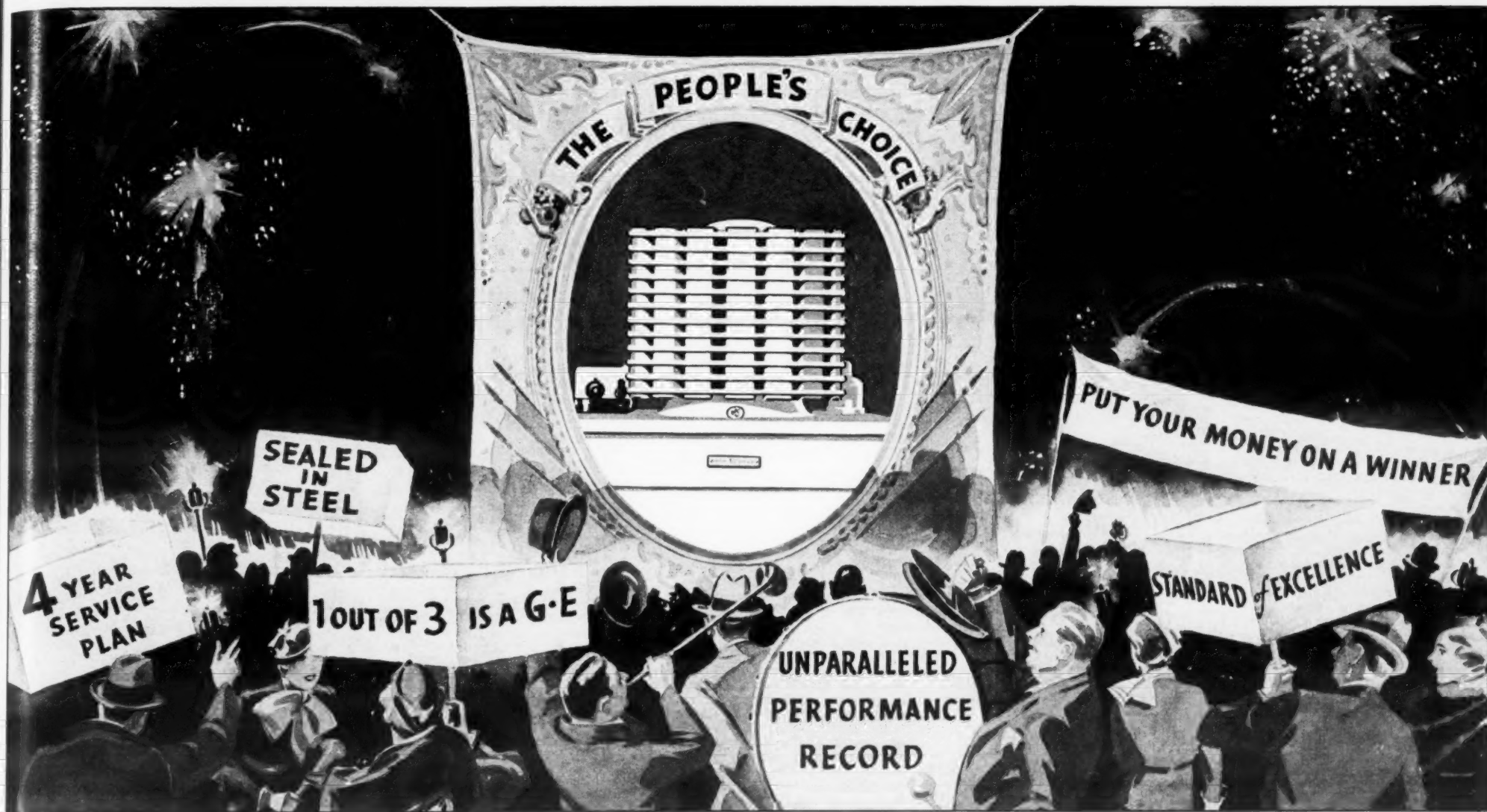
Distributors and Dealers Stocks (Dollar Volume)

| Month | 1930 | 1931 | 1932 |
|-----------|--------------|--------------|-----------------|
| January | \$13,700,000 | \$12,250,000 | \$ 9,273,064.81 |
| February | 12,000,000 | 12,250,000 | 16,917,655.00 |
| March | 12,550,000 | 14,000,000 | 16,211,747.00 |
| April | 11,700,000 | 14,000,000 | 16,772,070.00 |
| May | 10,750,000 | 16,200,000 | 15,760,603.00 |
| June | 10,910,000 | 14,500,000 | 16,037,024.00 |
| July | 14,125,000 | 15,200,000 | 15,296,433.00 |
| August | 14,500,000 | 12,700,000 | 11,860,904.00 |
| September | 11,900,000 | 12,200,000 | 10,074,745.00 |
| October | 10,800,000 | 12,071,800 | ... |
| November | 11,000,000 | 12,567,530 | ... |
| December | 9,600,000 | 11,940,600 | ... |

Monthly Sales By Price Classes Show Trend to Cheaper Models

The following table shows the number of units sold in each price class for 1932:

| Month | Cabinets with Systems Included | | | | | | Total | |
|-----------|--------------------------------|----|---------------|----|----------------|----|---------|-----|
| | Lowest Priced | | Medium Priced | | Highest Priced | | | |
| | No. | % | No. | % | No. | % | | |
| January | 7,232 | 31 | 3,804 | 17 | 12,166 | 52 | 23,202 | 100 |
| February | 12,101 | 39 | 8,751 | 28 | 9,978 | 33 | 30,830 | 100 |
| March | 29,044 | 50 | 16,585 | 29 | 12,487 | 21 | 58,116 | 100 |
| April | 40,520 | 40 | 50,245 | 50 | 10,082 | 10 | 100,847 | 100 |
| May | 42,424 | 46 | 46,408 | 50 | 3,394 | 4 | 92,033 | 100 |
| June | 37,332 | 34 | 72,129 | 65 | 1,283 | 1 | 110,744 | 100 |
| July | 11,480 | 48 | 12,240 | 51 | 242 | 1 | 23,962 | 100 |
| August | 9,521 | 45 | 11,187 | 53 | 462 | 2 | 21,170 | 100 |
| September | 17,822 | 62 | 10,852 | 37 | 345 | 1 | 29,019 | 100 |
| Total | 207,383 | 42 | 232,201 | 48 | 50,439 | 10 | 489,923 | 100 |



Here's a Straw Vote that means BUSINESS!

Prospect polls give General Electric
3 to 1 lead over second choice



OVERWHELMING public preference for the General Electric Refrigerator has been proved in six distinctly different polls. Here are the results.

56% of the wired homes not having electric refrigeration said their next major purchase for the home would be an electric refrigerator — and stated their choice. General Electric was specified 3½ times more than any other make.

40% of the prospective buyers specified the General Electric Refrigerator.

12% of the prospects specified the make receiving the second highest number.

Remaining choices were scattered among the one hundred or so different makes of refrigerators.

These polls, representing every section of the United States, were taken by wholly disinterested magazines and newspapers in their investigations of markets. They include polls by The Literary Digest, Popular Science, Physical Culture, Electricity on the Farm, Chicago Tribune and Hearst Papers.

What other refrigerator has so effectively overcome sales resistance for the retailer and for the salesman? 1 out of 3 owners of electric refrigerators has a G-E. Among prospects 4 out of 10 state a preference for G-E. Today, with the new low-priced G-E Junior available in addition to the famous Monitor Top, even this ratio is sure to increase. Born a leader, the General Electric Refrigerator continues a leader, and points the way to bigger net profits for the retailer.

General Electric Co., Electric Refrigeration Department, Section DF111, Hanna Bldg., 1400 Euclid Ave., Cleveland, Ohio

GENERAL ELECTRIC
ALL-STEEL REFRIGERATOR

ONE OUT OF THREE IS A GENERAL ELECTRIC

NEWARK FIRMS HOLD ELECTRICAL EXHIBIT

NEWARK—The second annual Essex electrical show, which carried the slogan, "The Wonders of Tomorrow," was held under the auspices of the Essex Electrical League from Oct. 1 to Oct. 8, here.

James H. Stapleton was general chairman of the show, and his committee was composed of F. D. Pemberton, in charge of publicity; Frank A. Hickey, program chairman; and H. S. Stratton, space chairman.

Thirty distributors took part in the exposition. At 11 a. m. Saturday morning, Oct. 1, Harold P. Litchfield, president of the league, in a short address officially opened and dedicated the exhibit to the citizens of Newark.

Charles A. Gammons, deputy mayor of Newark, spoke in place of the mayor.

'House of Magic' Feature

A crystal studio was built at the exhibit from which station WOR broadcast several times daily throughout the week. A public address system was installed in the building enabling those examining the exhibits, as well as those seated before the studio, to hear the programs.

The "House of Magic," a General Electric exhibit, was a feature of the show.

As women's clubs, public school pupils, and others were admitted without tickets, it was difficult to estimate the total attendance at the show, but at least 65,000 were there during the seven days, according to Mr. Stapleton.

The committee issued to each distributor 1,000 tickets with each 10x10-ft. booth. Non-ticket holders were charged an admission fee of 25 cents.

"Uncle Don," juvenile entertainer over WOR, gave a program the first Saturday night and the following Friday evening. On Monday night, Harry Hirschfeld, Gus Van, Eddie Dowling, Fred Coots, Lee Mortimer, and Jack King presented a program to those present at the exhibit, and were later on the air. Pick and Pat, WOR minstrels, were also part of the program during the week.

450 Attend Luncheon

On Thursday, the electrical show luncheon was held at the Newark Athletic Club and was attended by more than 450 members and guests. Orestes H. Caldwell, former Federal Radio Commissioner and now editor of "Electronics," spoke on "Electric Eyes, Electronics, and New Jobs for Electrical Men."

At this meeting, Mr. Litchfield appointed a nominating committee consisting of the following: Edward J. White, chairman; William M. Halsey, George E. Davis, George O. Lien, and Elliott Ranney. This committee is to bring in its nominations at the November meeting, when the league will hold its election of 1933 officers.

TWO NEW ORLEANS CLUBS BUY COPELAND EQUIPMENT

NEW ORLEANS—Two large orders for the installation of Copeland refrigeration equipment, one for the Original Southport Club, and one for the Club Forest, a new night club in the city, have been secured by Edw. N. Eberling & Co., Inc., Copeland distributor here, according to C. V. Bankston, sales manager.

Installation in the Original Southport Club consists of the following: one model T-2375 Copeland 2-hp. condensing unit; two No. 35 Temptrite water cooler units; one 14-ft. soda fountain completely refrigerated with salad counter; one 8WI Larkin coil in display and storage base case; one set of Copeland zero tubes in large Seeger porcelain box; and one Copeland room cooler.

In the Club Forest, a special 9x9x9-ft. cooler, using one model X-1200 Copeland condensing unit, and two special Larkin coils were installed. Ted Weems and his orchestra are playing at the Club Forest now. Both these clubs are under the same management, according to Bankston.

CHICAGO STORE FEATURES \$69.75 STEWART-WARNER

CHICAGO—Stewart-Warner electric refrigerators are being offered for sale at \$69.75 by O. W. Richardson Co., rug and furniture store here.

Advertisements of the sale, running in local newspapers, read: "All new models—all latest features—all 100 per cent guaranteed. No tax—no extras—no tricks."

Free delivery, installation, and service is offered purchasers of electric refrigeration by the company. Cash or terms are accepted.

TONY SARG BUYS FRIGIDAIRE FOR NEW YORK HOME

NEW YORK CITY—Tony Sarg, the well-known illustrator and father of "Tony Sarg's Marionettes," was sold a W-8 Frigidaire recently by S. E. Cohn of the household division, Frigidaire Sales Corp. of this city.

Trupar Field Man



B. K. WILLIAMSON
Mayflower district manager in five middle western states.

WESTINGHOUSE CO. SHOWS LOSS IN THIRD QUARTER

EAST PITTSBURGH, Pa.—Westinghouse Electric & Mfg. Co. reported a loss of \$2,715,122 for the quarter ended Sept. 30. This compares with a loss of \$1,881,979 in the June 30 quarter, and net profit of \$992,632 in the September quarter, 1931.

These figures are on operations of all Westinghouse divisions. No separate figures on the refrigeration business of the company are available.

For the nine months ended Sept. 30 the company had a net loss of \$5,917,250 compared with a deficit of \$966,709 for the corresponding period of 1931.

Orders received in the September quarter totaled \$14,126,064 against \$30,983,034 in the 1931 period. Sales billed amounted to \$17,482,376 against \$27,230,401 in 1931. For the nine months' period orders received amounted to \$54,857,938 against \$105,821,203, while sales billed totaled \$58,875,094 compared with \$87,853,736.

The company had cash and marketable securities, at current values, on Sept. 30 amounting to \$30,784,779 compared with \$31,828,053 at Dec. 31, 1931. Current assets totaled \$88,762,906 and current liabilities \$4,459,903, a ratio of about 20 to 1 compared with 13.8 to 1 last Dec. 31.

"Evidence is accumulating on every side of the improvement in general business conditions is the belief of executives of the Westinghouse Electric & Mfg. Co.," according to a statement accompanying the report. "From careful analysis of the general business situation the company has no hesitancy in stating that the turn for the better has been made."

3 REFRIGERATION FIRMS WIN ADVERTISING AWARDS

DETROIT—Of the 50 international awards given by the Direct Mail Advertising Association of America for the best direct mail campaigns of the past year, three went to the sales promotion departments of manufacturers of mechanical refrigerators—Kelvinator, Frigidaire, and Electrolux—according to an announcement made by Frank Pearce, secretary of the association.

Cash awards were given to the best three campaigns. First prize of \$100 went to the Seaman-Patrick Paper Co. of Detroit, second prize of \$50 was awarded to the Philadelphia Savings Fund Society, and third prize of \$25 went to Buick-Olds-Pontiac Sales Co.

Joins York



C. A. PEARSON
New commercial sales supervisor for York Ice Machinery Co.

'HOUSE OF MAGIC' TO BE EXHIBITED AT FAIR

SCHENECTADY, N. Y.—The "House of Magic," a section of the General Electric research laboratory here, will be moved to Chicago for the 1933 World's Fair ("A Century of Progress"), as a feature of the General Electric exhibit.

An auditorium will be constructed as part of the exhibit where the discoveries and developments that have emanated from the research laboratories will be shown and explained.

The space to be occupied by the company, 9,000 sq. ft. in the circular hall of the electricity building, will be the largest awarded to any one manufacturer in the exposition buildings, according to F. H. Gale, manager of conventions and exhibits of the General Electric Co. The setting for the exhibit will be designed by Raymond Hood.

In addition to the "House of Magic," equipment will be installed to illustrate the application of electricity to transportation by land and water, to scores of industrial uses, and to the home.

Special emphasis on electric cookery, refrigeration, and air conditioning will feature the presentation of G. E. home appliances. Another feature of the exhibit will consist of a display of apparatus for the generation and distribution of electricity for home and industrial use.

With a modern decorative background and spectacular lighting effects in keeping with the architectural scheme of "A Century of Progress," the 1933 exhibit will be in such contrast with the G. E. display at the fair of 1893 as to dramatically truly the path of electrical progress.

Modern electrical equipment will be housed in a series of sections beneath an observation balcony backed by massive pillars, 13 ft. in diameter, and rising to a black ceiling 71 ft. above the floor. Pillars, balconies, and partitions will be decorated with light in the modern motif characteristic of the exposition.

Many Comments Made In Frigidaire Log Book

DAYTON—The log of the *President Pierce*, the ship which carried the 2,250,000th Frigidaire on its round-the-world trip, contains many comments on the Frigidaire written by visitors at each port of call.

"Matahum" (good) seems to be the favored expression in Manila, and "Bahut aehla" was the compliment in Singapore. French visitors in all parts of the world decorated the log with such remarks as: "La beaute, tres moderne, indispensable and usager satisfait."

Dr. I. M. Hassnma, physician on duty on *H. M. Yacht Nahroussa* at Alexandria, expressed his sentiments in good Egyptian, and interlined the translation thus: "Most necessary outfit in every modern home." King Fuad's yacht is Frigidaire equipped.

H. M. and Aileen M. Shiveley, who represent the Goodyear Rubber Co. in Singapore, wrote: "A life saver to those who live in the tropics."

F. W. Allen of Frigidaire Sales Corp., Colombo, Ceylon, wrote: "One up already on last year's business."

SEVEN LUCKY NUMBER FOR WESTINGHOUSE SALESMEN

DALLAS, Tex.—Seven is the lucky number for Westinghouse refrigerator salesmen in this part of the country. Seven Texas salesmen finished in the Lucky Seven Wonder Tour, Westinghouse sales contest, and the winners' names were printed in the seventh edition of the official bulletin.

The seven winners are: first, W. O. Gamble of Fred R. Gamble, Inc., Dallas; second, W. W. Drodgy of Houston Light & Power Co., Houston, Tex.; third, Byron Reaves, Southwestern Gas & Electric Co., Gladewater, Tex.; fourth, J. E. Watson, A. C. Rogers Co., Dallas, Tex.; fifth, L. D. Weathers, Fakes & Co., Fort Worth, Tex.; sixth, Fred C. Hopkins, Swann-Schulle Furniture Co., Austin, Tex.; and seventh, R. W. Byrnes, Westinghouse Refrigerator Store, Houston, Tex.

W. O. Gamble was high man in the Plus 77 sales contest during July and August. Byron Reaves took second place, while W. W. Drodgy and L. D. Weathers split third.

KELVINATOR LEASES FOUR MORE FAIR SPACES

DETROIT—Kelvinator Corp. has leased four additional spaces for its exhibit at the 1933 Century of Progress Exposition in Chicago, factory officials have announced.

The space now reserved is considered adequate for a display by Kelvinator of its various lines, including some 16 household models, commercial refrigeration units, ice cream cabinets, room-cooling equipment, and oil burners.

With Jewett



W. L. DURHAMER
Ohio district manager for Jewett electric refrigerators.

DIVIDEND IS DECLARED BY GENERAL ELECTRIC CO.

SCHENECTADY, N. Y.—General Electric Co. reports for the nine months ended Sept. 30 profit available for dividends on the common stock of \$9,726,395.22, equivalent to 34 cents a share. This compares with \$30,753,850.14 for the first nine months of 1931, or \$1.07 a share, according to Gerard Swope, president of the company.

The October dividend of 10 cents per share on common and 15 cents per share on special stock will be distributed to 178,579 stockholders, compared with 139,697 a year ago.

Sales billed by the General Electric Co. for the first nine months amounted to \$113,049,474.95, compared with \$206,138,967.01 for the corresponding period last year, a decrease of 45 per cent.

Orders received for the first nine months of 1932 amounted to \$94,374,114 compared with \$202,700,016 for the corresponding period of 1931, a decrease of 53 per cent.

The company's profit in the September quarter was \$2,716,967 or 7 cents a share, against \$3,788,278 or 11 cents a share in the June quarter, and \$9,873,879 or 32 cents a share in the September quarter last year.

Costs, expenses, and other charges totaled \$108,844,670 compared with \$183,015,401 for the 1931 period. Net income from sales was \$4,204,804 against \$23,123,565, and other income amounted to \$7,452,863 compared with \$9,561,535.

OKLAHOMA DEALERS STAGE COLD COOKING EXHIBITION

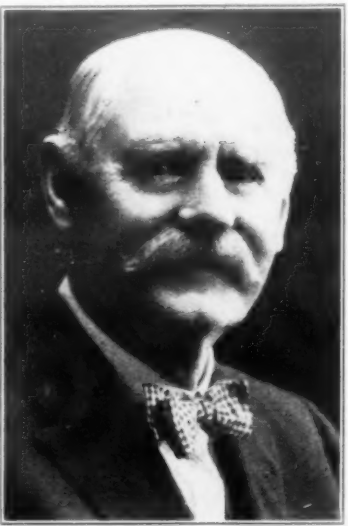
McALESTER, Okla.—More than 200 women recently attended a cooperative one day cold cooking school held here, sponsored by the Public Service Co. and seven refrigerator dealers, according to Linus W. Walker, local Westinghouse dealer.

A full-page newspaper advertisement invited all women to learn how to make frozen desserts, and how to use an electric refrigerator properly. An afternoon and an evening session were held.

No sales efforts were permitted at the meeting. All of the seven makes of refrigerators were used in making desserts, and the women were invited to inspect them all.

The meeting was in charge of Ruth Newberry and William Parkerson of the Public Service Co.'s Tulsa, Okla., office, and H. B. Curtis and Francis Dustin of the McAlester office.

Retires



J. L. BAKER
Resigns from active management of Baker Ice Machine Co.

SCHOOL VALUE TOLD BY HOME ECONOMIST

By Margaret M. Thompson

DETROIT—"More than 10,000 women attended my cooking school this week, so I believe that I can state, not because it is my line of work but because of the facts, that cooking schools are the most valuable type of sales promotion work that money can buy," says Ida M. Chitwood, home economist.

Mrs. Chitwood, under the auspices of the *Detroit Free Press*, conducted a four-day free course in cooking at Orchestra Hall. The last day of the school, by 12:30 p. m. women were lined up for two blocks, slowly threading their way into the hall. At 2:15 the auditorium had been filled to capacity, and doors were forced to turn away more than 2,000 women.

Refrigerator, Range Education

"Education in the use of the electric refrigerator and electric range is needed by housewives in all parts of this country," says Mrs. Chitwood. "After each cooking school session, numerous women come to me with problems and questions on these appliances."

"It depends on the section of the country as to whether more questions are asked on refrigerators or ranges. In the southern and eastern parts of the United States, women ask about refrigerators. On the West Coast, all the inquiries are about ranges."

"Recipes are, as a general rule, worked out in the East. For this reason, women from Ogden, Utah, and Denver out to California experience difficulties with their cooking, because of the difference in climate and altitude between the East and the West."

Cost of Electric Cooking

"Women complain to me that electric cooking costs too much. I know that this is due to the fact that they do not know how to use electricity. Take the automobile, for example,—a person can waste gasoline if he does not understand how to operate his machine. It is the same way with electricity for cooking."

"Each woman who buys an electric range should be educated in its use, for one dissatisfied customer can influence more prospective buyers than six satisfied ones."

"Cooking schools are the answer as to how to educate the housewife. Here you have direct contact with the woman, and you can answer her questions, and solve her problems."

"We have been successful, in three months, in putting products into stores, which companies have advertised for six months without results."

Mrs. Chitwood had a Kelvinator and Frigidaire electric refrigerators and an Electrochef range on the stage for her demonstrations.

At the close of the school, a number of valuable gifts were presented to the audience, including four electric refrigerators, an electric range, a vacuum cleaner, kitchenware, flowers, scores of baskets of food, and copies of the loose-leaf homemaker booklets compiled by the Women's Service Bureau of the *Detroit Free Press*.

GIBSON NAMES OUTLETS IN ST. LOUIS, LOS ANGELES

GREENVILLE, Mich.—Frank K. Meehan of St. Louis and Fey & Krause, Inc., of Los Angeles have been appointed distributors for Gibson electric refrigerators in their respective territories, according to Frank S. Gibson, vice president of the Gibson Electric Refrigerator Corp. here.

The St. Louis distributorship was arranged by E. H. McCarthy, midwest division manager. An article appeared in a recent issue of the *St. Louis Globe-Democrat*, city newspaper, describing Mr. Meehan, the new distributor, as a business man who won his way to the top the hard way, having been at various times a prospector, a ball player, a boxer, and stenographer, and is famed for his fiery sales talks.

"Among other things," the article continues, "Mr. Meehan is a member of 8 separate organizations, all of varied character, and is not only a member, but is president or one of the board of directors of all of them."

Les Taufenbach, Gibson's western division manager, signed up Fey & Krause, who have had experience in distributing appliances and automotive equipment. H. D. Alshuler will be in charge of refrigeration sales for the new Los Angeles distributor.

SOUTHERN EQUIPMENT CO. WINS NORGE CONTEST

SAN ANTONIO, Tex.—Southern Equipment Co., local distributor of Norge electric refrigerators, attained a greater percentage of quota than any other Norge distributor in the United States during the Victory sales campaign from July 1 to Oct. 1, according to J. G. Cummings, vice president in charge of electrical and radio activities for the Southern Equipment Co.

Mr. Cummings received a congratulatory communication from John H. Knapp, vice president in charge of sales of Norge Corp.

KELVINATOR STAGES EXPORT CAMPAIGNS

Detroit—Keenly competitive sales contests were held by the Kelvinator distributors in Belgium, Morocco, Porto Rico and Japan from April 1 to July 1 this year, according to E. H. Wilcox, manager, export division, Kelvinator Corp. here. It has taken more than two months to compile results and send report of these contests to the factory.

In each of these campaigns, the export department participated by offering, as first prize, a K-4 cabinet to the salesman having the largest volume of sales. The distributors, themselves, awarded for second and third prizes, the sum of \$50, or its equivalent, in the currency of their own country.

Results in Belgium

In Belgium, Joles Nachtergaele, refrigeration engineer, graduate of the University of Gent, won first prize in the Etablissements Pierre Dehaes, Brussels. Alphonse DeWolf, salesman, won second prize. Maurice Verschraeghen, winner of third place, was a mechanic two years ago. His ability won appointment as chief service man, and later as a salesman in Flanders. He now operates in Bruges.

Philippe Govaerts, sales manager in Flanders, is given credit by the management in Brussels for contributing to the success of Nachtergaele and Verschraeghen.

During the month of July, the Dehaes organization conducted a "Private Handicap" contest for salesmen in the meat market department, in which some of the men sold as high as 400 per cent of quota assigned.

Porto Rico Contest

In Porto Rico, the Porto Rico Railway, Light & Power Co., at San Juan had a quota of 100 PK-5 Kelvinators to sell. By the middle of June, this quota had been exceeded, the contest resulting in 114 sales.

E. Quinones of Rio Piedras territory won first prize. I. Reyes of Caguas took second place, and Julio Enriquez of Vega Baja territory won third. Some of the salesmen in this contest doubled their quotas.

The contest in Morocco, sponsored by the Societe Anonyme Elect Ra, Casablanca, was conducted as a bicycle race, starting from Oudja and running down to Marrakech. Each sale counted for one step, although some of the larger commercial sales were regarded as two steps.

Campaign in Morocco

J. Escrivat, head of the Rabat agency in Morocco, won first prize. Ch. De Dreuille, salesman in the Casablanca office, took second place. R. Clemencon, head of the Fez agency, won third prize.

Contributory to Mr. Clemencon's success was the sale of a commercial refrigerator model for installation in the Fez palace of the Sultan of Morocco.

The Morocco contest was managed by C. Chanoine, commercial manager of Elect Ra, at Casablanca, assisted by Pierre Godquin.

In Japan, salesmen from both the Osaka and Tokio offices of Ryobi Denki Shokai, Ltd., Tokio, were enrolled in the sales contest. R. Kato of the Tokio office won first prize.

K. Hayashida and M. Uemura, also Tokio office men, won second and third prizes. Mr. Uemura exceeded the sales record of P. Marunaka of the Osaka branch by a narrow margin.

MILWAUKEE G. E. MEETING ATTENDED BY 175 DEALERS

MILWAUKEE—Representatives of more than 175 dealers and utility sales outlets for the E. H. Schaefer Corp., General Electric distributor here, were present at a meeting held recently at which a new sales plan was outlined by D. E. Anderson, general sales manager of the corporation.

The meeting began at noon with a luncheon at which E. H. Schaefer, president of the distributorship, was host to the visitors. Following the luncheon, Schaefer gave a short talk to the dealer and utility executives, after which the new sales plan was described in detail by Anderson.

W. J. Daily, manager of the advertising and sales promotion division of General Electric refrigeration department, closed the meeting with a summary of present sales activities and direct mail, newspaper, and magazine advertising plans.

E. V. Oakwood, newly appointed commercial manager for the corporation, was introduced and talked briefly on the G. E. Junior refrigerator.

BOSTON DEPARTMENT STORE APPLIANCE SALES UP

BOSTON—Electrical appliance sales were 23.7 per cent greater for August, 1932, than a year ago in department stores of metropolitan Boston, according to the Federal Reserve Bank of that city.

The sales of housewares in department stores for that month were 32.8 per cent less than for August, 1931.

An Important Message to every Electric Refrigerator Dealer

- Selling refrigerators next year, to be successful, will have to be based on more definite knowledge of the product. More proof on the part of the salesman. Gone forever are the days of selling by claims and statements alone.

The market is now beset by cheap, short-lived refrigerators, poorly constructed and unsatisfactory in operation. Yet it is a time when the public is considering carefully the value received for every nickel it spends.

- To be successful tomorrow you must win confidence in the **money value** of the refrigerator you sell by proving performance right on the sales floor. Your prospects will buy only when definitely convinced of:

The actual performance of your refrigerator.

The Permanent Efficiency in your refrigerator of the two things that together produce that performance—the machine unit and the insulation.

- Every refrigerator sale will have to be utilized to help make more sales. Your refrigerators will have to give such satisfactory performance that friends and relatives of the users will be influenced favorably toward them.

Practically every electric refrigerator on the market now claims identical features—whether the price is \$59.50 or \$150. But there is a fatally wide variation in the performance and permanence of refrigerators sold today. It should not be difficult to make sure you have a make that meets the new requirements for next year's selling. If you don't find it out for yourself, your customers will find it out for you—and they will hold you accountable.

Essentially, electric refrigeration requires an efficient machine unit to take heat out of the cabinet, and efficient insulation to keep it out and prevent excess running of the machine and too costly current consumption.

- Be sure the refrigerator you handle has a good compressor, economical to operate and strong enough for the load.

Then be sure your refrigerator contains an insulant that not only gives good protection when new but also after months and years of service.

- There are dependable facts to assist you in determining the most satisfactory insulation. Not advertising claims but published results of thermal tests conducted by such authorities as the U. S. Bureau of Standards show Dry-Zero to be outstanding in insulation efficiency (low conductivity).

Equally dependable tests show Dry-Zero to be least affected of any insulating materials, whether vegetable or mineral, by the moisture absorption which is inevitable in any refrigerator. They show Dry-Zero will not oxidize, settle, crack or disintegrate throughout the life of the refrigerator. All these things are demonstrable.

- These are all reasons why Dry-Zero is used in 16 of the 33 refrigerators whose specifications were given in the May 18 issue of Electric Refrigeration News. They are reasons why you should want Dry-Zero insulation in the electric refrigerator you sell.

With Dry-Zero insulation and an efficient machine unit you can prove to your prospects that your refrigerator represents permanent performance—that will mean profitable selling in the highly competitive market of 1933.

If you would like more information about Dry-Zero insulation, address Dry-Zero Corporation, Merchandise Mart, Chicago, Illinois. Canadian Office, 677 Broadview Avenue, Toronto.

THE MOST EFFICIENT COMMERCIAL INSULANT KNOWN DRY-ZERO

MERCHANDISING SECTION ELECTRIC REFRIGERATION NEWS

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Keeping Dealers

PERHAPS one of the biggest problems facing electric refrigeration sales executives is that of dealer turnover.

Officials of some concerns have reported (privately) that their turnover of dealerships this year has been all the way from 30 to 60 per cent. And observing with apprehension the present unsettled conditions in the field, some sales managers and field representatives are thinking long and hard with a view toward keeping their dealer organizations reasonably intact next year.

It has always seemed true that to dealers the pastures on the other side of the fence look greener. It seems especially true today.

Dealers are grumbling to field representatives. They are writing lengthy letters to the home office. They are forming associations (of the "mutual protective" variety) with other dealers in attempts to force manufacturers and distributors to consider their ideas on policy. And many of them are seeking new franchises.

Reasons for defections in dealer ranks include:

- (1) Increased competition.
- (2) Chiseling.
- (3) Lower discounts.
- (4) Long-term guarantees on which dealers carry the burden.
- (5) Price reductions without rebates.
- (6) Difficulty of financing time-payment sales.
- (7) Sales by manufacturers of "no-name" refrigerators directly to department stores, which can then undersell "regular" dealers.

In past years the gaps in dealer ranks have been filled by going out and getting new dealers. Invasions of various types of retailing fields to get new electric refrigeration dealers have been both rapid and thorough. First, the utilities. Then specialty dealers were set up. Followed electrical contractor-dealers, hardware stores, furniture stores, automobile dealers, piano dealers, radio dealers, plumbing and heating contractors, building suppliers, drug stores, and whatnot.

Biggest invasion was that of the radio field. Along in 1930 several of the industry's leading sales executives took note of the sorry plight of hundreds of radio dealers all over the country. Radio sales had dropped badly. Why not offer these dealers a life-saver in the form of an electric refrigeration franchise—and in the process secure a flock of new dealers?

It was done. Radio dealers stocked refrigerators. They sold them. And their radio sales dropped lower than ever, because they were now (in the words of Dave Trilling, hard-working Norge distributor in Philadelphia) "hot after cold business."

That, incidentally, leads to an interesting conjecture. The fact that most of the concerns which have brought out electric refrigerators this year are radio manufacturers might lead to the supposition that older refrigeration manufacturers are really responsible for the influx of new ones, that said influx might be in retaliation for the electric refrigeration industry's invasion of the radio field.

Noting how their dealers were diverted from radio to refrigeration activities—and with what success—radio manufacturers may have reasoned as follows:

"All right. If it's refrigerators they want, that's what we'll make and market."

Distributors and dealers for these radio manufacturers had cut their eye-teeth on somebody else's products; hence when the radio manufacturers brought out refrigerators this year, their field organizations were all set. They switched franchises; and by so doing, cut big holes in dealer organizations of older manufacturers.

For next year the situation sizes up about as follows:

Almost every retailer of any description who is an attractive prospect for a dealership either is now selling electric refrigerators, or has tried it and been found wanting.

The task of maintaining adequate dealer organizations now becomes twofold: (a) keeping present dealers within the fold; and (2) taking good dealers away from competitors.

Keeping the dealers one has, of course, is considered much the more commendable course of the two. The waste of educating a new set of dealers each year is terrific.

Also, the value of dealer continuity—of keeping one product linked in a community's mind with the name of a particular dealer over a period of years—is almost inestimable. The reputation for stability, for maintaining good service throughout the years, and for believing in a product so strongly that he sticks to it year after year, is worth as much to a manufacturer as it is to a dealer.

Here at ELECTRIC REFRIGERATION NEWS subscription sales are divided into two classes: new and renewal. Always we are pleased to receive a new subscription. But it is renewal subscriptions which really gladden our hearts. Likewise, we believe that the renewal of dealer franchises will probably do a great deal to keep manufacturers in a happy frame of mind within coming months.

If the present method of distribution is to be maintained, keeping dealers is probably one of the most important tasks of the new year.

Gleanings from Other Periodicals

THE MATTER OF APPLIANCE TESTING

DISCUSSION continues on the advisability of establishing an official laboratory for testing and approving domestic electrical appliances. This approval would definitely label a refrigerator, a range, a flatiron or a percolator as efficient and dependable or it would deny the label and brand it as sub-standard. There are two schools of thought.

The advocates of appliance testing cite the experience of the gas industry and urge that such a central laboratory would relieve the expense now borne by the power companies in their own testing and also aid the public to secure the utmost in utility. The opponents assert that such a system of approval tends to degrade quality and retard progress, because every appliance that bore the label would claim perfection, which would becloud relative values. They question the ability of any laboratory to grade the dependability and believe that it would add to the cost of the goods, without benefiting the public.

But the average electrical man, as he listens to the argument, is inclined to take neither side, and asks this pertinent question, Does the public want to be protected beyond the consideration of safety? For people have a God-given right to decide what they like and what they do not want. Through experience, men and women learn to judge quality in silk and wool, in hardware and groceries. As electrical appliances become better known in the home, won't this problem of quality solve itself? Also, it is worth considering whether it will not cost less of the electrical industry's money to teach the public how to judge quality in electrical appliances than to establish grade symbols, police them and educate the buyer to recognize them and depend upon them. There is an honest difference of opinion and a round-table discussion should be held to clarify thoughts and formulate action if necessary.

In a discussion of appliance testing, in a recent meeting, a laboratory enthusiast voiced the opinion that there should be a requirement of 600,000 ohms insulation resistance in each range. To which a market-minded wag replied, "What we ought to be talking about is how to overcome the resistance to putting an electric range in 600,000 'omes." And, after all, isn't he right?—*Electrical World* Oct. 15, 1932.

SUPPORT FOR THE RETAILER'S EFFORTS

ONE of the most interesting features of any trade paper at present is the advertising pages in which manufacturers are discussing with their retailers their plans for the promotion of the branded products which they are offering to the trade. It will be found that at present a large share of the space used is employed for the purpose of announcing advertising campaigns which are about to be released as a means of helping the dealers to move the manufacturers' goods.

Advertising of this kind serves a two-fold purpose: it informs the trade of the sales promotion effort which the manufacturer intends to put behind his goods and behind the merchants who stock them, and it likewise encourages the merchant to go ahead with his own local retail advertising on a normal scale.

The manufacturer's advertising is live news to the trade. The people who stock and sell the goods want to know their merits as merchandise, and they are interested in their profit possibilities as well; but the big thing, after all, is salability, and that is affected to a large degree by the character and quantity of the advertising. No manufacturer with a worthwhile campaign ought to keep it a secret from his jobbers and dealers, especially when he can transmit the information so easily and economically through the pages of the business press.—*Advertising Age*, Oct. 1, 1932.

Letters from Readers

He Contends that Range Sales 'Drop' Not 'Flop'

National Electrical Manufacturers Association
5600 W. Taylor St., Chicago
Oct. 24, 1932.

Editor:

Your editorial of Oct. 19, "Electric Range Sales Flop," starts off with quite a sour approach which cannot be justified by the broad facts. Have you not been unduly affected by the sob story of some disappointed refrigerator distributor?

I first thought that it was just a misprint and that you had intended the heading to read "Electric Range Sales Drop" instead of "Flop."

Your editorial seems to confuse the industry activity with that of certain individual manufacturers, and gives the impression that the whole range program has been a flop.

In the first place I know of individual range manufacturers who have spent several hundred thousand dollars promoting electric ranges this year.

As to range manufacturers spending money on the range program as an industry—while proposed plans were given early publicity it was well understood that the range manufacturers had not decided as to when they would start contributing money—some urging a 1933 activity; that was settled this summer, and they are now contributing so much per range according to the original plan.

While it was, and is, a very definite part of this industry program, thru the formation of the National Electric Cookery Council, to expand the business thru the development of dealer outlets, it was never part of the industry program to touch the matter of wholesale method of distribution. Anything that has been done in that matter was purely a question of some individual company policies.

The manufacturers in sponsoring the National Electric Cookery Council had no lack of appreciation of the very big job ahead of them in developing dealer outlets and sought the cooperation of the National Electric Light Association to this end. They have been assured that the leaders in the N.E.L.A. responsible for policy are in sympathy with the promotion of electric cookery and with the development of dealer outlets.

There is no lack of an immediate market for electric ranges as far as rates are concerned, inasmuch as the N.E.L.A.'s Statistical Department has estimated that there are at least 11,000,000 homes out of a total of 20,000,000 electrified homes, which already have favorable rates for electric cooking. Some well grounded estimates have placed this figure as high as 13,000,000; so that the picture of the range market being as spotty as that for gas refrigerators is a very much distorted one.

No sane manufacturer could be disappointed "in the public's response to the tidings that at last electric cooking has become fast, economical, and efficient." It would take more than the "tidings" that an electric cookery program was to be launched to influence the public to storm the doors of distributors to buy electric ranges, or even the effect of the amount of individual manufacturers advertising that was likely to be done. But, as your editorial points out, there have been some real successes in distributor activity where all the necessary local sales promotion work has been done intelligently and energetically—and where there was sufficient capital to extend operations.

The plans of the National Electric Cookery Council were only recently completed and the organization perfected, as shown in the Plan Book which was sent out over the signature of Preston S. Arkwright, chairman of the National Electric Cookery Council and president of the Georgia Power Co., and a great asset to this organized movement.

Early in the discussions of the Joint Planning Committee and the Joint Executive Committee of the National Electric Cookery Council, when they first got together last spring, it was realized that before a national advertising job was to be profitably undertaken the necessary preliminary ground work would have to be laid in the formation of a fully functioning field organization, with sufficient local electric cookery council set-ups.

The first local electric cookery council has just been organized in Milwaukee.

The first general meeting of the National Electric Cookery Council has been called for Nov. 2 at Chicago. This will include all the members at large and the divisional directors.

The industry range program is operating on a sound basis, and a real start has been made. Public acceptance is only a matter of time and effort, already achieved in places like the cities of the Northwest—where indeed more electric ranges have been sold each year than electric refrigerators.

H. J. MAUGER,
Chairman, NEMA Intersectional
Cookery Program.

Destructive Criticism

E. H. Schaefer Corp.
Milwaukee

Oct. 24, 1932.

Editor:

We have enjoyed the ELECTRIC REFRIGERATION NEWS to a great extent and thought that your editorials were very constructive to good business, but we certainly have to take serious objections to your last issue in which you claim electric range sales are a flop.

We have spent considerable money in educating our dealers to the possibilities of the electric range and this editorial no doubt, will be a means of undoing all of the work which we have tried to do in the last two years. I feel that your editorials should be constructive but this editorial of the Oct. 19 issue is anything but constructive.

I should think your paper would help us rather than to hinder us in getting dealers sold on the electric range business as we certainly need this range business in conjunction with our refrigeration business in these times. I am quite sure that the majority of the General Electric refrigerator distributors will feel very unkindly towards the ELECTRIC REFRIGERATION NEWS in view of the reaction which they are receiving from the editorial which you published last week.

I don't believe there is anything in the electrical business which is a flop. It is true that we may not be getting quite as much business as we would like to have but I can venture to say that within a short time, the range business will exceed the refrigeration business, but it certainly will not do that with the editorials which you have been running in your paper.

E. H. SCHAEFER,
President.

Hushing Won't Help

Editor's Note: With Mr. Schaefer and Mr. Mauger, the editor believes that electric ranges can be sold. It was pointed out in the above mentioned editorial (Oct. 19 issue) that a few scattered electric refrigeration distributors have done a good sales job with electric ranges this year. It was also noted that one or two manufacturers have directed conscientious sales promotion activities.

But the fact remains that a concerted promotional effort on the part of all major range manufacturers has yet to become effective, and that thus far little has been done in the way of adequate sales training in the hows and whys of electric cookery for distributors, dealers, and salesmen. The editor does not feel that this situation will be helped, or the cause of electric ranges be advanced by hushing the matter.

Reinforcement comes from the editor of *Electrical World* which, in its Oct. 22 issue, presents the following editorial. Although this editorial writer softens his blows by putting 16-ounce gloves on his words and phrases, the intent and purpose of the editorial is clear indeed. We quote (italics ours):

The Domestic Market—All Talk and No Sales

"I have heard talks about the domestic market for the past 10 years. At each convention addresses are made giving complete data on this market. Each year a new plan or program is promulgated for an industry sales campaign. Each year I hear about the possibilities of lighting, electric cooking, electric water heating, and electric refrigeration. Yet we make very little progress. With the exception of the refrigeration campaign, each plan turns into talk and not sales. Why don't we get the business instead of talking about it all the time?"

"This is a typical comment of executives in both the manufacturing and utility branches at this time. It is a truthful comment, a logical inquiry and deserves an answer. Progress is very slow, there is much talking and little selling, and the industry is not gaining much ground in its competition for the consumer's dollar. For example, many interested in the present range campaign say there is a great amount of promotional talk, but no business organization is available to even attempt to follow through and sell ranges. Also in connection with air conditioning and water heating there is much discussion, a great deal of research and very little selling. Even the old reliable shelf appliances are decreasing in sales volume. Thus, in general, sales pressure is at a low point.

"There are several reasons given for the present doldrums in domestic sales. Sales codes, expensive wiring, anti-merchandising legislation, lack of consumer-purchasing power, the high cost of financing dealer paper, high utility rates, no money for sales or advertising—these are typical topics for long and active discussions, and some of the factors undoubtedly have an influence in creating the present low level of sales.

"But the true reason lies deeper. Little progress is being made in selling because the industry fails to face the facts or to act as a unit in using the facts to create merchandising methods and organizations that can be put to work."

(Concluded on Page 7, Column 1)

Letters from Readers

(Continued from Page 6, Column 4)

sell service and appliances to the homes. Manufacturers of appliances are still seeking a business policy and organization. They are playing with this and that idea of merchandising; they are striving to beat out a competitor, usually by a price cut; they are focussing on the development or sale of this or that appliance and neglecting all others; they are discussing new and theoretical organizations and policies at their headquarters instead of investigating the facts in the markets, and they will not commit themselves to the necessary monetary obligations to do a real advertising and sales job. This condition is not unusual, but it is particularly acute at this time. It is evident that despite years of experience either no sound policy and organization principles have been established or conditions beyond their control prevent aggressive selling. "Utilities fumble about with equal ineptitude. Agitation for merchandising legislation has caused a cessation in utility sales pressure; a desire to develop dealer outlets usually has taken the form of slowing down their own sales; some stop selling all but the so-called heavy-duty appliances; all are under pressure to keep the merchandising departments "in the black"; economy moves have forced a smaller advertising appropriation and a decrease in sales staffs. Executives and commercial managers are favorably disposed to selling but they are still trying to develop sales plans that will prove to be economical and they will not make commitments as to money and men necessary to force sales by simply using high-pressure sales methods. Analogous conditions exist with jobbers and dealers. Not in years has there been so little agreement as to what to do to build up sales organizations or so little actual sales pressure in the marketplace.

"What can be done? On a national scale it should be possible to agree upon and fix definite policies and to approve and institute some proved merchandising organizations. A joint committee of experienced men should be able to survey the situation, investigate and act upon policies and practices that have been tried and found effective and at the same time put back of current sales programs the organized and unified business thought and effort needed to change present sales conceptions into commercial successes. Also in each local area it should be possible for regional joint committees to parallel this national work so that direct sales action will be had along tried and approved lines in each regional and local market. The only way to sell is to go after the business according to methods that both experience and good judgment indicate to be sound and economical."—*Electrical World*, Oct. 22.

No-Name Refrigerators

A. A. Schneiderhahn Co.
214 Third St., Des Moines, Iowa
Oct. 26, 1932.

Editor:
Pursuant to your request of Oct. 24, I am attaching copy of the letter which was sent to leading manufacturers of electric refrigerators.
Having lived through the demoralization which has taken place in the radio industry because manufacturers either could not or would not agree on sound policies that would protect the market, it seems to the writer that unless electric refrigerator manufacturers work in closer harmony to protect their market against fundamentally unsound practices, that the electric refrigeration industry will follow right in line and suffer the same type of market demoralization that has taken place in radio.

A. A. SCHNEIDERHAHN,
President.

Des Moines Electric Refrigeration
Distributors Bureau
Des Moines, Iowa
Oct. 8, 1932.

Electric Refrigeration
Manufacturers:
At a meeting of the Des Moines Electrical Refrigeration Distributors Bureau held recently, the writer was instructed by unanimous vote to communicate to you their opinion of the plan which we understand is proposed by leading refrigerator manufacturers to offer to the larger operators no-name electric refrigerators, through a sales plan conducted directly between such manufacturers and these major operators.

This meeting was attended by the following distributors:
General Electric Supply Co., General Electric; Iowa Auto Market, Mayflower; Iowa Radio Corp., Crosley; Fred Adams Co., Norge; A. A. Schneiderhahn Co., Leonard.
Stewart-Warner Co., Stewart-Warner; H. E. Sorenson Co., Kelvinator; Harger & Blish Co., Copeland; Westinghouse Supply Co., Westinghouse; Herring Wisconsin Co., Bohn; Midwest-Timmermann Co., Majestic.

Practically all of these distributors represent their manufacturers in the entire state of Iowa.

It is the unanimous opinion of these distributors that the offering of no-name refrigerators to the key outlets in Iowa would serve to create additional competition against the standard line as

well as against the efforts of the distributors of the standard lines, and would result, in their opinion, in very little additional business, if any, and divert the refrigeration sales from the standard lines to the no-name merchandise.

It would place the manufacturer in direct competition with his distributors as indicated above and depreciate the value of the distributor's franchise, as such an operation would effect the volume sales of the distributor as he naturally looks to these big operators for an appreciable per cent of his business.

A large discount on no-name merchandise offered to these key accounts, whether they purchase the no-name line or not, will undoubtedly result in an effort on the part of these large buyers to get increased discounts from the distributor of the standard line.

The sponsorship by major outlets of no-name refrigerators in competition with standard refrigerators, in the opinion of this association, would reduce the value of the national and other advertising on the standard lines by diverting the important aggressive selling effort of these big operators to the no-name merchandise.

Competition between manufacturers of no-name refrigerators in their effort to sell these large operators, of which there are relatively few in the state of Iowa, would probably result in the letting down of the bars, so that these outlets will enjoy maximum discounts on less than carload orders, and get other concessions that would probably result in making this business unprofitable for the manufacturer who ultimately gets it, causing the legitimate distributor of the standard line to be decidedly at a disadvantage.

There would be a danger, in our opinion, that the service problem on the no-name refrigerators would be passed on to the distributors of the standard line of the same refrigerators, causing further increase in the operating costs of the distributor of the standard brand.

Overbuying or lack of movement of these no-name refrigerators on the part of large operators would probably result in promiscuous dumping, and price demoralization generally, that would be a detriment to the entire market.

Newspaper advertising rates in Des Moines are so high, even to the retailer, who must pay the national rate on electric refrigerators, that even the largest operators could not afford to buy sufficient space, in our opinion, to successfully promote volume sales on no-name refrigerators.

The manufacturer's name who produces the no-name line will become public property eventually, necessitating endless explanations and difficulties to both the dealer of the no-name line as well as the distributor of the standard line and altogether such an activity might be construed by the large operators as an indication that the manufacturer has lost confidence in the ability of the distributor of the standard line to produce a volume acceptable in the territory.

It would seem as an admission on the part of the manufacturer that the standard name of his refrigerator is of little value in merchandising and that no-name refrigerators can be just as readily sold to the public.

These are the outstanding reasons why the wholesale distributors of electric refrigerators in the state of Iowa herewith ask that an operation of this kind be not made effective in this state.

We would appreciate an early reply to this communication and trust that it will receive your favorable consideration.

A. A. SCHNEIDERHAHN,
Executive chairman.

Thank You

Grigsby-Grunow Co.
5801 Dickens Ave., Chicago
Oct. 25, 1932.

Editor:
I noticed with considerable gratification a splendid article in your issue of Oct. 19 about our radio promotion material.

I want to say more than a polite "thank you" because you cover the material much better than some of our radio trade papers who profess greater interest in such material.

EARL L. HADLEY,
Advertising manager.

Companion Lines

United States Radio & Television Corp.
3301 South Adams St., Marion, Ind.
Oct. 27, 1932.

Editor:
Our idea has always been built around the thought that the distributor who has established a sales volume on other lines of appliances can naturally use this in getting acceptance on both electric refrigeration and radio.

Frankly, we have encouraged our outlets to handle other lines of appliances along with radio and refrigeration.

In this way, we are offering to our dealers lines of merchandise which are saleable throughout the entire year and which offers them an opportunity to keep their gross profit up.

Specialized sales in refrigeration in the past has no doubt been very profit-

able, but we realize there are many manufacturers offering refrigerators on the market at this time, and the good name and reputation of the distributors who have been in business for some years, will enable these distributors to handle their volume radio sales and also their portion of the volume of other electrical appliances.

Companion merchandise is very much in keeping with our policy and suggestions which we are making to our jobbers at the present time.

H. H. KUNKLER,
Sales manager.

Statistical Data

Fuller & Smith & Ross, Inc.
1501 Euclid Ave., Cleveland
Oct. 21, 1932.

Editor:

We are anxious to receive sales and operating data on the following types of retail outlets selling refrigerators and other domestic electrical appliances:

Electrical specialty stores.
Electrical appliance stores.
Department stores.
Hardware stores.
Radio and music stores.
Furniture stores.
Refrigerator stores.
House furnishing stores.

The specific data which is desired is the following:

Average per cent of net profits on sales of all merchandise handled.

Average per cent of gross profits on sales of all merchandise handled.

Rate of turnover on all merchandise handled.

Dollar volume per square foot of floor space on all merchandise handled.

Per cent of advertising expense to gross volume on all merchandise handled.

Per cent of selling expense to gross volume on all merchandise handled.

Per cent of service expense to gross volume on all merchandise handled.

If you are not able to give us this data on each of the various outlets listed above, please give it for the outlet

or outlets for which you have it available. Also if accurate figures are not available, we believe reasonable estimates based on your knowledge of the fields will serve our purpose.

Your courtesy in giving us as much of this data as possible within the next several days will be sincerely appreciated.

WM. J. STAAB,
Space buyer.

Apropos

Continental Finance Corp.
of Fort Wayne
805-6 First & Tri-State Bldg.
Oct. 8, 1932.

Editor:

Your editorial in the October issue of *ELECTRIC REFRIGERATION NEWS* on "Companion Merchandise" is very apropos, and was read with much interest by Mr. O'Rourke and myself. You are to be congratulated on the "aliveness" of your paper and the movements you have started for the betterment of the industry.

CARLOS E. HARRISON.

TWO PUZZLE PRIZES GIVEN BY TRILLING & MONTAGUE

PHILADELPHIA—Because of the large number of well-written essays submitted in the Norge cross-word puzzle and essay contest, Trilling & Montague, Norge distributor of this city, had to award two prizes instead of one.

The two winners of the contest were: Mrs. A. M. Weil and Mrs. Annabel Smead. The announcement of the winners appeared in the *Philadelphia Evening Bulletin*, and the following contest judges were also named:

Dr. Thomas J. Mulvey, dean, Charles Morris Price School of Advertising and Journalism, Philadelphia; Leonard Ormerod, past president, Poor Richard Club, Philadelphia; and Frank J. Kinsella, advertising director, Courier-Post Publication, Camden, N. J.

378 UNITS SOLD IN ST. LOUIS CAMPAIGN

ST. LOUIS—The sale of 378 Westinghouse refrigerators during a two weeks' sales campaign was the record made here recently by the Arthur R. Lindburg Co., Westinghouse refrigerator distributor, according to Ralph H. Wilson, sales manager.

Charles L. Fink, general manager of the distributorship, and Mr. Wilson, sales manager, were in charge of the campaign.

Individual records were made by several salesmen. George Schultz sold five units during the campaign, bringing his total for the year to 140 domestic sales. This makes him a member of the inner circle of the Quota Buster club of the Westinghouse organization, and places him second high in the United States to date.

Attain Quota in Contest

Bert Weiss, by selling 16 refrigerators during the contest, and Joe Lang, by selling four, attained their quota of 77 refrigerator sales for the year, and are now members of the Quota Busters club.

George Minor, who was second high in the United States in the On-To-Mansfield contest, is near his year's quota, having sold 10 units during the two weeks' period.

Salesman Kessler sold 18 units; Barnes, 15; Auckley, 15; Hendricks, 14; Farrell, 14; Brokaw, 13; and Henry, 11, during the contest, according to Mr. Wilson. Fifty-two salesmen took part in the campaign.

To stimulate effort on the part of the salesmen, Arthur R. Lindburg, president of the distributorship, placed \$2.50 in the "kitty" for each refrigerator sold. The "kitty" totaled approximately \$1,000, and was divided among the leading men in the organization at the close of the campaign.

An Invitation

To ELECTRICAL APPLIANCE Distributors and Dealers

HERE is an offer of real assistance for electrical appliance distributors and dealers without cost or obligation.

With the greater percentage of refrigerator, oil burner, heater, stove and other appliance sales being made on a deferred payment basis, the importance of knowing how to properly present the time plan to prospective buyers cannot be overlooked. Distributors, dealers and their salesmen should have a thorough understanding of all phases of time selling. They can get this knowledge and it doesn't cost a penny—

Commercial Credit Company has more than a hundred trained men who know time selling from A to Z. These men are located in Commercial Credit offices throughout the

country—in all principal cities from coast to coast. One of these men will call and explain in all detail the subject of time sales—show distributors, dealers and their salesmen how to get the most out of time selling, how to make more sales on a time sales plan.

Use the coupon—Act now!

Commercial Credit Company
Baltimore, Md.

Gentlemen:

We would like to talk to one of your men who can show us how to profitably sell on time. We would also like full information regarding your service. This request is made with the understanding that it places us under no obligation.

Name _____

Address _____

By _____

Title _____

COMMERCIAL CREDIT COMPANY

COMMERCIAL BANKERS

HEADQUARTERS • BALTIMORE



WHEREVER YOU ARE • WHATEVER YOU MAKE, SELL OR BUY • INVESTIGATE COMMERCIAL CREDIT SERVICE

LITTLE STORIES OF INTERESTING
PEOPLE
IN THE REFRIGERATION INDUSTRY

THE EXPANSION VALVE

By George F. Taubeneck

LITTLE STORIES OF INTERESTING
IDEAS
IN THE REFRIGERATION INDUSTRY

Inside Dope

The Valve hears that:

Despite all flat denials which have been issued from the head offices of the Ford Motor Co., Henry Ford is definitely interested in electric refrigeration, and his engineers have been studying it.

It is not likely, however, that there will soon be a Ford household refrigerator. What interests Mr. Ford is, naturally enough, refrigerated transportation.

Until the market for mechanically refrigerated trucks develops to a point which would warrant a production of some 200 units a day, we are told, Mr. Ford probably won't rush into the business. But he's practically all set, should the demand arise.

At one time, when Ford dealers were dropping out of the race in almost alarming numbers, the Sage of Dearborn seriously considered putting out a household electric refrigerator to help keep his dealers going.

The tide turned, however, and Mr. Ford didn't find it necessary to enter into competition with his good friends at General Electric and Westinghouse.

Over at Fort Wayne, Ind., are two men who are glad they got out of the electric refrigeration business.

They are Gustave and John Berghoff, who are the brains (and part of the brawn) of the Wayne Oil Burner Corp. For a time they manufactured both refrigerators and oil burners. Then they sold their refrigeration division to Apex.

Since they began concentrating on oil burners, their position in that industry has been strengthened. 1932 has been their biggest oil burner year, and September and October, their biggest months.

Sales Manager C. G. Cleaver, who impresses the Valve as being a darned smart man, is the third member of the Wayne executive triumvirate.

Bill Grunow is tooling up to turn out 500 refrigerators a day.

Bill's distributors are said to be all lined up at the barrier, rarin' to go.

Charley Spreen, formerly chief engineer and code expert for Kelvinator, is looking mighty wise these days—and, as usual, saying nothing and maintaining a poker face.

Some of his friends guess that up his sleeve (or sewed in the lining of his coat) he is guarding designs for an electric refrigerator which can be turned out at an unusually low cost.

Those who follow the reports of the U. S. Patent Office know that his name frequently appears as having been granted a new refrigeration patent.

Bishop & Babcock, which has quit the soda fountain business, is said to be working actively with various breweries, bidding on the manufacture and supply of necessary parts to place in working order the brewery equipment which has been idle for 12 or 13 years.

American firms are gambling on the probability that the Volstead Act will be modified at the next session of Congress to such an extent that several have placed orders in Bavaria for beer to be delivered here next spring. A Uniontown, Pa., man has demanded delivery of 50 barrels of dark Hofbrau on April 15.

That new market for commercial refrigeration equipment may open up yet.

U. S. Radio & Television Corp. (One of the two or three largest manufacturers in the radio industry) has been turning out about 25 refrigerators a day at its plant in Marion, Ind.

This production thus far hasn't been enough to supply demands of its distributors, but the schedule will be stepped up by the first of the year.

U. S. has the lowest-priced hermetically sealed unit on the market. Prices range from \$114.95 to \$199.50, f.o.b.

Refrigerants continue to be a center of turmoil. They are apparently the "Balkans" of the refrigeration industry.

F-12 seems to be gaining ground. This new refrigerant, because of its advantageous comparative position toxicologically, is being sought for air-conditioning work; and may soon be in demand.

Several manufacturers are attempting to design relatively large rotary compressors for air-conditioning installations. Hence they are seeking a refrigerant with, among other qualities, low back pressures, non-flammability, and non-toxicity. F-12 and methyl chloride seem to be the two leaders for this type of work.

An entirely new refrigerant is now being field-tested by one manufacturer.

Daily and Brisbane



Arthur Brisbane (right), famous newspaper columnist, visits with Walter Daily, G. E. sales promotion manager, at Refrigerania headquarters.

Dave Brown Again

Pryings and pokings by the sees-all-knows-all *New Yorker* brings to light a story on the present whereabouts of Dave (David A.) Brown, formerly president of the Absopure Refrigerator Corp., which was taken over last year by Universal Cooler.

Brown is now a judge in the unique Jewish Conciliation Court in Lower Manhattan, which was inaugurated back in 1920. Gentile courts found they could not cope with the psychology of the Hebrew race, and decided to turn the whole thing over to the descendants of Moses and Daniel themselves.

Disputes over communal and religious customs, quarrels in congregations, etc., make up the largest share of cases.

A Detroit newspaper columnist adds reminiscences of Brown. Calling him "Absopure philanthropist, Detroit Community Fund director, one-time candidate for mayor, ebullient campaigner for charitable works," the writer *loquitur* as follows:

"Several years back Brown ran for mayor of Detroit.

"It looks as if I was in," he said three days before election.

"In where? You haven't a chance."

"That isn't what they tell me," said Dave, in a slight huff.

"I met him after election. He was his buoyant self again.

"I knew you'd remember me at the polls, even after all you said," he sallied. "That vote I got Tuesday was yours, wasn't it?"

Col. Smith Gives a Party

Colonel Frank E. Smith, Serrel president, knows how to give a party. He was host over the week-end of Sept. 23-26 at the annual get-together party of automatic refrigeration executives. The accordion-like invitation he sent out is a good piece of sales promotion.

The folder is constructed on the principle of those compound postal cards with scenic views of Niagara Falls, or that rare relic from our golden past, the round-the-world cruise ticket.

When you pick it up carefully by the front cover, the other end cascades to the floor, and you must gather up all the zigzag sections and start over again. Color scheme is blue and white, with pen and ink cartoons on each page.

First thing to meet the eye is an airplane view of "Upland Knolls," Colonel Smith's home in Greenwich, Conn., which makes a tempting cover for the folder. Opening to page one the guest is greeted by a picture of Colonel Smith with his special grin. The occasion for the party is explained immediately below the teeth and the cigar.

Next page tells the "who"—a list of guests—and the "where"—"Upland Knolls." Dates are listed next, under the large heading "Time."

Following a page giving train times, and details of transportation, comes a section on "Dress." Guests are advised to appear in "Work clothes or informal (overalls and monkey wrench)." Accessories are golf clubs and bathing suits.

Having come to the end of the folder, little arrows point the way back. The pages, starting from the end and working toward the cover, are given over to the "Itinerary." Each single section gives the program for one day, ending with Monday breakfast and trains back to town.

And so we come out to the cover again, all ready to start over. (These could go through this one for hours, complicated gadgets fascinate us. We

always amazed by ending safely each time at the front cover.)

Frozen Quarters

A new-and-different outlet for hard-up counterfeiters has been contributed by France, that sympathetic nation. It seems that, according to A. B. Gantler, vending machine operator in Bronx and Westchester sections, a Parisian gas company discovered something very sticky about one of its meters.

Some of these recording devices had been fitted "with chutes for liberating a certain amount of gas upon the deposit of a 25-centime piece, a French coin equal in size and weight to the American silver quarter.

"For some time," according to Gantler, "the gas company collectors were baffled by no money in the coin box of one meter in a large apartment house. The meter readings showed that gas was being used, but very few coins ever appeared in the box."

The authorities sleuthed around, looking for pipe tapping, since no slugs were ever found in the box and the mechanism could not be "tripped" by a knife or wires. Mystery deepened. There was nothing wrong with the pipes.

"The trick was so clever," explained Gantler, "that the occupant who had been getting his gas for nothing finally told a friend and then the story spread.

"The meter was worked with an ice slug, made by freezing water in molds the exact size of the French coin. When the ice slug was dropped into the meter it released the gas and then dropped into the coin box, where it melted and evaporated."

Just in case some bright-eyed tinkerer reading this may want to start a new industry to lead us out of the depression, and try freezing quarters in his Kelvinator, we add this sad post-scriptum.

"The use of the 'scavenger,' or rigid

prong, in most coin chutes nullifies the use of ice as a slug in modern machines."

Lee Stratton Counts His Blessings

To those in the electric refrigerator game who are inclined to "grouse" about their business, the while casting their eyes about for a "better 'ole," Lee Stratton of Cincinnati, district representative for the Leonard Refrigerator Co., has the following suggestion to offer:

"Look at the other fellow; then consider how fortunate you are to be in the refrigeration game. It isn't such a bad business after all."

He then cites a visit he and a distributor made recently to a large dairy in Memphis, Tenn.

"We were shown through the plant by the president of the company. He pointed out that the building, which the dairy owned, represented an investment of \$65,000. On one floor was a large can-carrying machine which cost \$30,000. A little farther on were huge tanks which cost in the neighborhood of \$50,000 to install.

"On the next floor was a bottle-washing machine which the president told us cost \$130,000. In the next room we saw a bottle-filling machine which had recently been installed to the tune of \$25,000.

"The president pointed with pride to the yard in which were drawn up endless numbers of trucks and wagons, representing a small fortune in themselves. And in an adjoining building we inspected huge boilers and big compressors for refrigeration which cost around a quarter of a million dollars.

"When we returned to the president's office, I asked him how much he made on a bottle of milk. 'Two mills,' he said. Two mills! Five quarts of milk to make one cent! And hundreds of thousands of dollars tied up in equipment!

"Then I thought of the money that is made on a Leonard by the distributor and dealer and made a mental calculation of how many quarts of milk this dairy man had to sell before he made a similar profit.

"The distributor and I walked out of the building with the conviction that the refrigeration business was not so bad after all."

A Idea As Is A Idea

L. C. Way from 'way out Houston way, recently had some amusing correspondence with an inventive genius; and sent it on to the Valve.

Herewith we reprint Mr. Way's letter, and two of those written by his Texas client (name deleted). How you like?

Way Engineering Company
Houston, Texas
October 13, 1932.

Electric Refrigeration News
Detroit, Michigan.
Gentlemen:

We believe that the inventor of the scheme enclosed, herewith, should have a depression medal. Also, perhaps many readers of your publication will get a good laugh out of same.

L. C. Way,
Way Engineering Company.

Wild, Texas
Oct. 6, 1932.

Way Engineering Company
Houston, Texas.

Dear Sir:

Please send me your prices on anhydrous ammonia. Is it a powder or a liquid. If it is a liquid I want a gallon. And if a powder I want enough to make

a gallon for freezing purposes. Give me the price on that amount. Also the price on 20 gallons. I am making an experiment and if the one gallon works I will be in the market for 20 gallons or more.

Please give me your best price on the above. Hoping for an early reply.

Yours truly,
JOHN DOE

Wild, Texas
October 11, 1932

Way Engineering Company
Houston, Texas

Dear Sir:

Your letter of October 7th was received today. In which you ask me to advise you as to the experiment I wish to make. I run a small market and cold drink stand out in the country and ice is a real problem for me and I wish to make my own ice.

I was informed that I could build a good thick box and put a vat inside this box so as to make a water proof box then put the ammonia in the box. Then have the tinner make another vat to fill with water and put in the ammonia and then close the lid on the box box to make it air tight. The ammonia is supposed to freeze the water. This is supposed to be the box.

Do you think this will work. There is a vat like this in a Cafe in Fort Worth. I know that the ice plants use ammonia for the manufacture of ice. I will not let any one know what is use to freeze the ice. So please let me hear from you at once.

Yours truly,
JOHN DOE

P.S. Is there any other ingredients to be use.

Amen, Bro. Barton

We think every manufacturer, factory man, distributor, dealer, and salesman in the industry will agree with this. It was written by Bruce Barton, president of Batten, Barton, Durstine & Osborne, and appeared in the November *Redbook*.

"Recently I attended the annual sales conference of a very large company.

"The company's salesmen were brought in from the field for a three-day session. With them came the principal customers—the so-called jobbers who handle the product in various cities. These jobbers are prominent citizens of their communities. Many of them are well to do.

"The industry is 35 years old. The men who started it were in their twenties, and are now in their fifties. The original factory was a little three-room affair; the present plant covers many acres.

"The jobbers also were young men, with little business, 35 years ago. They and the factory men have grown up together. In good years and bad they have stood shoulder to shoulder. They have accumulated their years and their fortunes in the common enterprise. Sometimes they have named their children for each other; some of their daughters have married sons 'in the family.'

"For three days I was with this group of men, listening to their jokes, sharing their golf, hearing them call each other 'Joe' and 'Bill.'

"And I thought: 'This is a side of business that the critics do not see. Critics write and talk about business as if it were wholly materialistic, an organized grab-bag in which the strongest grab the most.'

"They do not know that business is friendship and recreation; that it is the happiest way which men have yet discovered for playing together the game of life."

"I was fortunate in my youth. I grew up in pleasant communities among congenial people. I went to a college where I knew good fellows. I made friends.

"But the friends who are closest to me, almost without exception, are those whom I have acquired in the daily routine of making a living.

"And while I am well paid for working, I think that I should keep right on working though there were no pay."

"For there is nothing in life which is so much fun as business. Nowhere does a man make such friends."

The Heathen Chinese

Frequently furrowed as our forehead has been over the question of how to refuse courteously yet conclusively contributions to these columns for which we have no space, we think we have found the answer. Out of China, by way of Winnipeg, comes the last word in polite rejections. A Winnipeg newspaper reports it thusly:

"We have received your manuscript with infinite delight. By the sacred ashes of our ancestors we must swear that we have never read such a splendid piece of writing. But, if we printed it, His Majesty the Emperor, our most high and mighty ruler, would order us to take this as a model, and never print anything inferior. And this would not be possible in less than a thousand years. We regret to return your divine manuscript and ask one thousand pardons."

Closes Frigidaire Log



"A great passenger," wrote Captain Henry Nelson, of the SS. President Pierce, as he signed the logbook of the 2,250,000th Frigidaire.

News of Companion Electric Appliance Lines

Second Hotpoint Range Manual Tells How to Handle an Interview

(Editor's Note: This is the second of a series of reviews of the six-assignment Electric Cookery Salesmanship instruction course for General Electric Hotpoint range salesmen, prepared by LaSalle Corporation Service (division of LaSalle Extension University). This review is based on Assignment 2, "Handling the Interview.")

By Elston D. Herron

When G. E. Hotpoint range salesmen sit down to study this, the second assignment in their super-salesmanship training, they will find before them an effective, interestingly fictionalized manual on how to handle an interview.

LaSalle sales experts have chosen, in the second book, to tell the story of the activities of a fictitious range salesman as he does a day's work. His sales procedure embodies interview methods used by the country's most successful range salesmen.

Summarized Story

Summarized, the story is this: Salesman Endicott steps back a pace when his day's first prospect opens the door—he does not attempt to force himself in. He makes sure that he is talking to the housewife, then uses the fact that she owns an electric refrigerator to turn his conversation to the subject of electric cookery.

In a minute's time, he mentions sufficient advantages of electric cookery to create within the prospect—busy at the time of the call—a desire for additional knowledge. He does not ask for permission to call again. He asks which of two different times will be most convenient for his prospect.

On his third call of the morning, Endicott is admitted to his prospect's home. Immediately, he mentions several modern appliances visible in the home, and assures Mrs. West, the housewife, that electric cookery is as modern (advantage 1) as the best electrical appliances.

Discusses Speed

And the G. E. Hotpoint range is as beautiful as it is modern, he tells Mrs. West, then turns to a discussion of its speed (advantage 2). He explains the use and principles of waterless cookery, proves, with technical data, that his statements are true.

That electric cookery is economical (advantage 3) is his next statement, and he explains that with a Hotpoint range, his prospect will save one-sixth on a year's meat bill.

He discusses the Thrift Cooker, tells how its "live steam" prevents transference of taste and odor among foods in the container, and says that current is consumed during only a part of the actual cooking time. He backs his economy point with another statement that inexpensive meat cuts, cooked in the Thrift Cooker, are as delicious as more expensive pieces.

Checks Each Point

After making each point, Endicott assures himself that his prospect understands his statements, by securing commitments to that effect from her.

Following a summary of the Hotpoint's economy features, he takes up the range's fourth advantage—cleanliness, and points out its desirability from the standpoints of further economy and saving in labor.

Next advantage discussed is simplicity, and Endicott's remark on this subject is: "With electric cookery, you have very few new things to learn. It is more a matter of forgetting some of the unpleasant things about cooking that you already know."

Near the close of this interview with his prospect, Endicott makes an appointment to tell Mr. West the Hotpoint story that night, and arranges to demonstrate the range to the housewife the following afternoon at the dealer's salesmen.

Detailed Analysis

Following this story of Endicott's interview with Mrs. West is a detailed analysis of his proceedings. G. E. Hotpoint salesmen are shown *how* and *why* Endicott said the things he did, how he took advantage of openings, how he used the advantage-proof-action process (first, a statement; second, its proof; third, securing a favorable commitment from the prospect).

The analysis explains that while the salesman was primarily selling decision, he needed for electric cookery, he was selling the Hotpoint specifically (division 2) by mentioning its name and features with each point made on the general subject of need.

Attention is called to the fact that Endicott made no attempt to outline all advantages of electric cookery on his first call. This was for a purpose: It left the prospect's enthusiasm at a peak; something remained with which to interest him further, on the night visit; the salesman's hint that he would discuss

more advantages later heightened the housewife's interest.

The post-story discussion also emphasizes the fact that smart salesmen invariably make notes concerning an interview's progress and outcome, and check all points which have definitely been touched upon.

Text of the manual then shifts back to the story-telling style of instruction. Salesman Endicott, speaking to both Mr. and Mrs. West, summarizes the first five advantages discussed that morning, then introduces a new point—that electric cookery is certain.

Interviews Couple

He explains the temperature control, appeals to the husband's sense of economy by stating that current is consumed only 20 minutes out of each hour the Hotpoint oven is in use.

By way of strengthening his presentation, and leading it into another channel simultaneously, Endicott mentions that a townsman, Mrs. Foster, called recently to commend the G. E. range, especially for its reduction of expense and discomfort in canning foods.

The Hotpoint man describes various tests used to prove that kitchen temperatures are not raised one per cent by heat escaping from the oven, and points out the advantage of this in increasing the pleasures of kitchen tasks.

Health is protected, too, he tells his prospects, because the Hotpoint takes no oxygen from the air as it operates, and thus eliminates the necessity of the housewife's receiving too little oxygen as she works at her range.

Foods Retain Properties

He points out, also, that foods cooked electrically retain more of their nourishing properties than do those prepared in a flame type stove, because by the former method, less water is used in the cooking process, with a resultant reduction in amount of nutrient extracted from the foods.

The G. E. Hotpoint offers safety, too, says Endicott, in that there are no matches needed, there is little likelihood of children being burned by the stove, and no harm is done if a child does turn on an operating switch.

Last point of the salesman's presentation intended to sell the need for electric cookery is his explanation of Hotpoint's Telechron Timer, which automatically starts and stops cooking operations after being set by the housewife.

When asked the cost of a Hotpoint range, Endicott agrees to quote a price after demonstrating the range the following day, then leaves the West's home.

Appeals to Two Motives

Following the tale of Endicott's evening interview is another complete analysis of his sales procedure. It points out that this "perfect salesman," in talking to Mr. West, appealed chiefly to two buying motives—the man's affection for his wife, and his interest in economy.

Endicott refrained from discussing price until he was sure both husband and wife were convinced of the range's value, the analysis explains.

He used several types of literature to illustrate points in his discussion—he made prospects use their eyes as well as their ears to get the Hotpoint story.

A last, italicized assertion at the end of Assignment 2 tells the reader something in no uncertain terms—that regardless of the many unforeseen complications which may arise in the course of a sales procedure, there is a definite plan which may be used in each sales attempt.

PORTABLE ELECTRIC IRONER IS INTRODUCED BY APEX

CLEVELAND—The Apex Rotarex Corp. is introducing a new model electric ironer which will retail for \$69.50.

The new iron is portable, is all-electric, and occupies 16x36 in. of floor space. It is equipped with a soft rubber padded knee control. The hand control is positioned on top of gear case convenient to operator's right hand.

It has a full-open left end to permit circular garments to be slipped off over the roll. The heat is intensified at this end, where the major portion of the ironing is done.

Control switches are convenient to the operator's right hand. A pilot light indicates the current supply to the heating element. The iron is equipped with a pressing lever to convert the revolving roll to stationary pressing position for pleating or pressing.

The shoe of polished chrome-plated steel is scratch and rust-proof. Shoe release lever permits open movement of shoe for cleaning or waxing. The pressure clutch is positive and quiet.

WEISS TELLS OF AIR CONDITIONING FIELD

NEW YORK CITY—The need of a strong and active trade association for the air-conditioning industry is suggested by E. B. Weiss, in a series of two articles entitled "Air Conditioning—Advertising's Next Big Job," which recently appeared in *Printers' Ink Monthly*.

One of the points brought out in the articles is the importance of sane control over reckless promotion material that usually accompanies the growth of a new and promising industry.

"Radio suffered trials and tribulations due to reckless promotion which featured its initial presentation," states Weiss. "The oil burner, in less degree yet to a sufficient degree to cause trouble, also paid for early promotion extravagances."

"With air conditioning a steady hand at the controls is even more important than it was in radio and oil burner development, and for the following reasons:

Opportunity for Reckless Claims

"First, air-conditioning equipment takes so many shapes and forms, and various appliances perform such unrelated functions, that the opportunity for reckless claims is greater than in any industry since the advent of the automobile. Thus, we already see ordinary humidifiers featured as the answer to any and every air-conditioning problem," says Weiss.

"Second, air conditioning, even more than the oil burner, is very closely related to matters of health. Improper installations may definitely menace the well-being of families, and even larger groups."

"In the third case, air-conditioning apparatus is going through a period of tremendously rapid changes. Radio went through the same experience, but the complications involved in air-conditioning equipment changes make radio receiving set engineering difficulties seem quite simple by comparison," according to the articles.

No Installation Formula

"Fourth," says Weiss, "there is no such thing as a formula to follow in installations. Every home represents a separate and distinct problem. The same is true of commercial installations. It is really an engineering matter, and it is going to be handled, largely, by men who may be excellent mechanics, but who are far from being engineers."

"As the fifth reason, air conditioning shows every sign of attracting an influx of manufacturers and distributors who are entirely strange to the business. This influx will make the rush into radio appear to be merely a sedate march," thinks Weiss.

"In other words, a business which must be built on a scientific basis, is going to be overrun with organizations to which science will be an utter stranger."

"The industry needs cooperative research work. It probably needs a pooling of patents, as has been done in the automotive field. It needs cooperative advertising which will cut through the maze of conflicting competitive claims, and present the basic story of air conditioning to the millions."

"It must have installation standards insofar as this can be worked out. In brief the industry requires, right now, a strong and active trade association—an association which will work on the various things just mentioned and others as well."

'TEMPERATOR' ANNOUNCED BY CROSLLEY RADIO CORP.

CINCINNATI—The Crosley "Temperator," a combined thermostatically controlled heater for winter and high-speed fan for summer, has just been brought out by the Crosley Radio Corp., manufacturer of the Crosley refrigerator and Crosley radio.

Of light weight and convenient size, the Crosley temperator is readily moved from room to room. When used as a heater, the thermostat can be set at any temperature desired. The fan is used to circulate the heated air to all parts of the room.

In the summer time, the heating element is merely switched off, and the temperator becomes a high-speed fan.

This new Crosley product will sell for \$9.98 in all parts of the country with the exception of the far West.

BALTIMORE HIGH SCHOOLS ARE EQUIPPED WITH HOTPOINTS

BALTIMORE—The Consolidated Gas and Electric Co. here has just installed model RA-134 General Electric Hotpoint electric ranges in the Parkton and Whitehouse high schools of this city, to be used in the home economics departments.

Food Mixer Built By Westinghouse

EAST PITTSBURGH, Pa.—A new electric food mixer, capable of performing a number of kitchen tasks, has been developed by the merchandising division of the Westinghouse Electric & Mfg. Co.

The new food mixer has a detachable juice extractor unit, a three- and a one-quart bowl, a double beater, and a single whipper. The motor beater can be detached instantly and used away from its original location, for example, in a sauce pan on the range.

The Westinghouse food mixer will mix liquids, mash potatoes, whip and beat, or act as a juice extractor. Its beaters are self-adjusting and may be tilted back so that they are free of the container or bowls.

It is about 14½ in. high, and is light enough to be moved about with one hand.

It is driven by a 1/9-hp. motor.

100 DEALERS PRESENT AT TOLEDO RANGE MEETING

HAMILTON, Ohio—The Estate Stove Co. of this city recently sponsored a sales meeting for the Electric Range and Equipment Co., Toledo, at which there were more than 100 dealers and prospects present, according to G. E. Dunn, sales manager, electric division of the Estate Stove Co.

E. A. Tullis, commercial manager of the Electric Range and Equipment Co., addressed the meeting. Dunn gave a talk on the possibilities of the electric range business from the dealer's standpoint. Celia S. Bush put on a sales demonstration.

30,000 NESCO CASSEROLES SOLD IN 10 MONTHS

MILWAUKEE—Thirty thousand Nesco Thriftycook electric casseroles were sold in this country by retail stores during the last 10 months, according to the manager of the electrical division of the National Enameling & Stamping Co., here. Ten thousand were sold during the last 45 days.

UNIFLOW BRINGS OUT 5 WATER SOFTENERS

ERIE, Pa.—Five water-softener models, all carrying a one-year guarantee against defective material and workmanship, are being offered by the Uniflow Mfg. Co. of this city.

The Supreme and Delux models are self-operating in that the softener will recondition itself through the Uniflow piston type of valve with a vacuum motor, which operates a timing device. The valve is operated by a hand lever, which may be located at any convenient place in the house.

The Supreme model has tanks finished in vitreous porcelain enamel. All other metal parts are hot dipped galvanized with the exception of the brass parts.

Heavy-Gauge Tanks

Construction of the Delux model is exactly the same as the Supreme, excepting that the tanks are hot dipped galvanized. The finish is air brush duco.

Tanks on both models are of heavy-gauge copper bearing steel. The valves are of non-blooming rubber and can be easily replaced. The method of water distribution coupled with the piston-type valve allows a high rate of flow, supplying a number of faucets at the same time.

The Uniflow Dart self-salting water softener is a high-capacity water softener with a large brine tank and the Uniflow single control piston valve.

Large Salt Capacity

The large-capacity brine tank holds enough salt to last for months at a salt filling; eliminating the inconvenience of handling salt every week. It is easily reconditioned.

Both mineral and brine tanks are hot dipped galvanized inside and out. The tanks are made of heavy-gauge copper bearing steel. Valve seats and stems are of bronze.

The porcelain self-salting water softener is a porcelain model which combines the mechanical features of the Dart model with the constructional features of the Supreme model.

The Premier model is a contractor's model and is equipped with the Uniflow single control piston-type valve. It is low priced and boasts a low operating cost. In reconditioning, it is necessary to move but one valve.

A SALES MAGNET for you!

It washes like the finest of the big fellows! Oversize agitator. Two speeds. It dries by water—whole batch in 30 seconds! Rubber diaphragm. Tap connection. It captures the imagination of customers! Dramatic demonstration qualities. AND it's a proven stimulant of business on major appliances!



The Mengel SQUEEZE-DRY Washer-Dryer

GET THE FACTS! Use the coupon

DEPT. R, MENGEL BCDY CO., Inc.
(Electric Appliance Division), LOUISVILLE, KY.

Send me records of actual accomplishments in retail store promotions; full details of your merchandising plan and promotional program; and one sample Squeeze-Dry on memorandum billing.

YOUR NAME

STORE NAME

ADDRESS

Methods Used By Dealers In Making Friends

Various Systems Applied By Owners In Building Retail Trade

Metropolitan Life Insurance Co.
Frederick H. Ecker, President
Policyholders' Service Bureau
One Madison Ave., New York City
Oct. 13, 1932.

Editor:

We feel that we owe you a copy of the enclosed because you were one of the editors. As part of our job of getting this material together we read from cover to cover and back again, every copy of the *ELECTRIC REFRIGERATION NEWS* published during the past two years. We might say that one of the results was to bring home to us again the effectiveness of the job you are doing.

If anything in the enclosed should appeal to you as something you would like to make use of, you have carte blanche. Go as far as you like.

Sincerely yours,

EARL R. TRANSMAR, Director,
Marketing & Distribution Service,
Policyholders' Service Bureau.

Editor's Note: Below is reprinted a number of condensed ideas from the above-mentioned booklet, "How 48 Store Owners Make Friends." Help yourself.

Odd Prices

Through its stock control records, a store in New York City has discovered that \$1.95 attracts many more purchasers than does \$2.00; that \$1.35 has much greater appeal than \$1.35; and that hosiery can be sold much more readily at 55 cents than at 50 cents.

It was pointed out that this illustrates that odd prices are not necessarily cut prices. Other interesting examples of this fact have since come to light. One merchant had been selling hair nets at 15 cents. Sales were slow. He changed the price to 2 for 31 cents, and his sales jumped immediately. A grocer who had been selling a bottle of sliced pickles for 25 cents found that he could sell a great many more after he had changed the price to 27 cents.

Does Courtesy Pay?

A retailer tried an experiment in courtesy. On a certain day, he had his employees show only ordinary courtesy to customers. The average sale that day was 28 cents.

The next day he instructed his salespeople to extend such courtesies as calling the customer by name, showing a special interest in helping him to find the article that would best meet his need, and accompanying him to the door. That day the average sales was 90 cents.

Acknowledging Recommendations

During the course of a sale to a new customer, the salesman in an Oregon store asks: "Who recommended us to you?"

In most instances, this store finds that some regular customer is named. The regular customer then is thanked by the store, either verbally or by letter.

The new customer, also is asked politely to recommend the store to his friends. The store has found the plan to be very successful.

Card Parties

A series of bridge teas recently was offered at a centrally located store in an Eastern city. A single fee, paid at the time of reserving the tables, covered the cost of cards, score pads, pencils, afternoon tea, and instruction by a bridge expert.

It is claimed that this service, offered in an attractive environment, drew discriminating patrons to the store.

Cashing Christmas Savings Checks

This retailer is reported to have increased his holiday trade 157 per cent by featuring his willingness to cash Christmas savings checks for customers. Display cards announcing that such checks would be cashed were placed in the show windows. Notices also were sent his entire mailing list, together with a list of items at prices well within the range of all savings checks.

The underlying idea was that customers getting their checks cashed would look at the Christmas displays, or, if they owed money, probably would pay their bills.

Daily Posting of News Attracts Trade

A merchant in a small town was able to attract many new customers and increase his sales to old customers by posting the day's latest and most interesting news on a blackboard mounted on a showcase inside the store.

Children's Photograph Display

A merchant in a Southwestern state secured the photographs of many of the children in his city and with them made a window display. He then advertised in the local newspaper, asking children to come to his store and "find themselves" in the window.

Of course, the advertisement interested many parents, who accompanied

the children. The display is said to have attracted city-wide attention and to have been effective in increasing sales.

Birthday Invitations to Customers

Every year a retailer in California sends to each of his customers a letter with some such sentiment as this:

There are some things a man can forget faster than a horse can trot—and one is to forget to remember his wife's birthday or his wedding anniversary. That's just it—on March 26th I celebrate my 49th anniversary—and I don't want you to forget—I want you to come in and have a smoke on me.

New Customers Secured Through Old

A Western store is successful in securing introductions to new customers. Four weeks after a customer has opened an account, a letter is sent offering him a credit on his account of 10 per cent of the initial purchase for any new customer he sends to the store.

Introduction cards are enclosed with the letter, one side to be filled out by the present customer and the other side containing the introduction of the new one. No responsibility for the payment of the new account is assumed by the customer who does the introducing.

Securing Good Charge Accounts

A merchant in Texas evolved a plan for securing charge accounts from women in surrounding towns.

This retailer wrote to bankers in towns in the surrounding territory extending to their wives the use of a hotel room from 9 in the morning until 5 in the afternoon, free, providing, of course, that they came to use the store as their shopping center.

It was suggested, too, that the bankers might extend this privilege to others in the town who might be interested. This plan assured the retailer of good credit risks and enabled him to open many new accounts.

The cost of the rooms was very little, for the hotel made price concessions in order to dispose of rooms which would otherwise be idle from morning until night.

Doll-Dressing Classes

Doll-dressing classes are bringing many little girls to a store in San Francisco. There is no charge or obligation for instruction, material, or patterns, and small would-be seamstresses have come in such numbers that it has been found necessary to split the class into two sections so that every one may be given attention.

A complete set of mimeographed patterns for 9-in., 12-in., or 17-in. dolls is given each little girl on enrolling. Patterns of the very simplest type include dolls' underwear, dress, coat, beret, and pajamas. All garments are kept in the store until completed.

Every child has her own folder marked with her name and address, and materials and patterns are stored in these when not in use. A young lady employed in the store serves as sewing instructor.

Keep a Cool Store in Summer

A retailer in a small New Jersey town finds it profitable to keep his store cool during summer. Six fans are kept going in the store all day.

He says that people stay longer in a cool store, and that the extra expense for electric current is small when compared with the increased sales.

Men's Night

A "very substantial and extremely profitable volume of business" is reported by a store in Atlanta, Georgia, as the result of its experiment with "Men's Night," staged on Dec. 22, and featured in newspaper advertising as well as in the following letter sent to a large list of male patrons:

The very confusion which women love in shopping is what scares the average man. Yet he must buy a certain number of gifts or lose his standing with the family. Monday night, Dec. 22, from 6 to 9 o'clock, is "Men's Night" at our store. No women will be permitted in the store except those who are here to serve you. In addition to the sales groups, there will be a staff of women trained to help distracted men get the right thing for the right person and get it wrapped and packed the way it should be. Buying your Christmas gifts here on "Men's Night" is as easy as an anesthetic—when you wake up, it will be all over.

Open by Appointment

"Open every evening by appointment," appears on a sign in the window of a Madison, Wis., store. This service is featured in the store's advertising.

New Use for Business Cards

A retailer on the Pacific Coast announces that business cards featuring interesting local information are making friends for him.

One week he passes out cards with a

short copy of the fish and game laws printed on the back. The next week he gives out a card with news about local motion pictures. Or, again, the card may carry a local football or other sport schedule.

Copy on the card is changed often. The cards are presented to customers with every purchase.

Rest Rooms Bring Trade

A rest room in a store is a potent factor in building up goodwill according to one retailer, who points out that its location also is an important consideration.

In this store a woman does not have to enter the store proper, as the stairway to the rest room is just off the entrance. Other retailers report that rest rooms are especially popular in cities and towns which are trading centers for farming communities.

Passersby Light This Window

A darkened display window, illuminated by a clever lighting device, is reported by a Midwestern retailer to have created a great amount of interest among passersby.

A sign above the darkened window read, "You can see this window by simply pressing the button." Window shoppers are said to have stood in line to press the button, which flooded the display with light as long as the button was held down.

Trade Scouts

A store in a Midwest town of 918 inhabitants is said to have done a business of over \$900,000 in a single year. It employs a young girl in each section of its trading territory to report trade prospects.

She sends in, each month, new addresses of people who have moved out of her territory during the month; lists those who are erecting new buildings of various types; and gives the names of possible customers.

Upon receipt of such information, the store uses direct-mail advertising about the item which it believes the prospect to be interested in buying.

Covers for Children's School Books

An Eastern store capitalizes the need of covers for school books by offering manila covers in different shades, just before school opens, available in any needed quantity for their customers or families their customers suggest.

The outside cover is plain, but the inside carries colorful advertising designed especially to appeal to children. A space on the inside for the child's name and address helps to insure the advertising being seen.

Welcoming New Residents

An advertising feature that has made many friends for a store in the Southwest is a "welcome package" presented to every new family that moves into the city.

A letter of welcome is sent by the store, inviting the new arrival to come in and receive a "welcome package," which is an assortment of merchandise.

Gifts for Customers Who Are Ill

A retailer in Rochester, N. Y., is building goodwill and increasing sales by sending a basket of fruit to any customer who is reported ill.

Apples as Christmas Gifts

Apples as an annual "thank you" to customers have been used effectively in recent years. One retailer arranges to have two dozen perfect apples sent to customers' homes.

A profitable business has been worked up by a girl living in the New York State fruit belt who ships these boxed apples to customers of a score of con-

cerns in New York, Chicago, Buffalo, Rochester, and many other centers. A fixed charge per box is made for first-class apples, plus postage.

Children's Birthdays

Many stores send suitable birthday cards to the children in their communities.

Four methods generally are used to obtain names and dates: (1) copying the birth lists published in local newspapers; (2) having each mother who trades at the store supply the names and dates of birth of her children; (3) getting names and birth dates of school children from their teachers; (4) enlisting boys or girls clubs.

A simple method of keeping the birthday record is to have a book in which separate pages are set aside for each month. All children with January anniversaries, for instance, are listed in the January section.

Coin-Filled Cake

A coin-filled cake was cut and passed out to customers by a Minnesota merchant in order to stimulate interest in his anniversary celebration. The cake contained 126 coins; 6 gold pieces and 120 silver pieces—giving visitors a double reason for wanting to "get in on" the party.

Discounts for Returned Calendar Leaves

Calendar leaves are used by one retailer to increase his sales. He prints an attractive special on the back of each leaf. If the leaf is presented at the store, a discount of 5 per cent is allowed.

Other retailers use leaves in calendar pads to print information of use and interest to their customers.

Free Nuts and Bolts for License Plates

A Kentucky dealer gains a great deal of goodwill by advertising that nuts, bolts, and washers for attaching license plates to automobiles may be had at his store without charge. He places them on a table where customers can help themselves.

Gifts for Graduates

During the graduation period, many retailers write letters of congratulation to graduates, and invite them into their stores.

One retailer invites each high school graduate into his store for a present. Accompanying the present—a necktie or a handkerchief—is a card saying, "Best wishes from (name of store)."

This store also writes letters to the parents congratulating them on their foresight in sending their children through high school.

Savings Certificates for Customers' Children

A merchant in a western city is reported to be building goodwill by operating a thrift plan for his customers' children. When a customer makes a cash purchase, 2 per cent of the amount is returned to the child in the form of a certificate known as "Percentage Script."

The script may be deposited in the child's name at the local bank, where it draws 4 per cent compound interest. According to the plan, it cannot be withdrawn until the child's fifteenth birthday.

Going Back 65 Years

A store in the east devised a birthday celebration that created much public interest. The public was invited, through an advertisement, to help the store celebrate the passing of 65 years of development in both store and city.

It announced an exhibition of "thing of 1857" and said it would like to bor-

row garments, furniture, photographs or other relics of 1857. The response was excellent. The store ran small advertisements daily, each discussing styles of dress in 1857.

Birthday Cake

An Eastern store celebrated its anniversary by displaying a large cake in its windows. The cake attracted much attention because of its great size. Each customer was presented with a piece of the cake.

Booklet to Commemorate Anniversary
A store in Philadelphia got out an historical booklet to commemorate its 100th anniversary. A week was set aside for the celebration of the store's founding. Among the window features were old bills of the store showing the prices of 1845.

Recalling Past Years

"How many of our customers remember what stores looked like 50 years ago?" A Pawtucket, R. I., merchant called back the days of a half-century ago by dressing the store in the mode of that time to set off his Golden Jubilee celebration.

Bird-House Contest

A retailer's bird-house contest, in which about 390 boys and girls participated, is reported to have been highly effective as a goodwill builder. The cost of the contest amounted to \$171.50, including newspaper advertising, entrance and instruction blanks, sign, five prizes, and \$60.00 worth of lumber.

Announcements were made to children in all of the schools, in addition to the newspaper publicity. Awards were based on workmanship, finish, ingenuity, suitability for birds, and age of contestants.

Clubwomen Contest

An effective business-building event was reported by a Midwest retailer who invited the various women's clubs of his city to compete in arranging window displays.

A committee of three local advertising men judged the windows, which were put on display at 7 o'clock on successive evenings. Local newspapers reproduced the latest display and described the window's arrangement. These papers were delivered free during the contest to every member of the competing organizations.

The club winning the contest was presented with a davenport.

Freckles Contest

A summer contest held by an eastern store, offering prizes to the boy or girl having the most freckles, is claimed to have materially increased sales. The names and addresses of the parents of the children registering in the contest were taken and letters suggesting that they visit the store were mailed out promptly.

"Who Knows?" Contest

"Who knows? Who remembers?" In a campaign developed around these two questions, one retailer gained a great deal of friendly interest.

A series of three folders was mailed to a selected mailing list. Each folder asked 10 questions about the past history and development of the town and community. The person who answered the greatest number of these questions was given a worthwhile prize.

Best Corn Contest

A retailer in a small town in Ohio is reported to be using prizes effectively for best farm products as a business getter.

This retailer offers, for example, \$100 in cash for the best ear of corn raised in the county. The size of the award seems not to matter, since the real impetus is the rivalry between farmers to produce the best product.

Such contests enabled the store to get acquainted with many farmers who were not regular customers. Scores of names were added to the store's mailing list.

Bank Failures Lowest In September

WASHINGTON, D. C.—Bank suspensions in September were fewer than for any month since March, 1932, according to figures made public recently by the Federal Reserve Board.

Sixty-five banks closed their doors during the month, 12 of them being national banks, four member state banks, and 49 non-member banks.

Total deposits of \$16,000,000 were involved. The 12 national banks held \$3,000,000; state member banks, \$2,000,000; and non-member banks, \$11,000,000. Deposits of suspending banks were smaller than for any month since March.

Suspensions for the first nine months of 1932 number 1,099 as compared with 1,243 during the same period in 1931.

During September there were no bank failures in either the Boston or New York Federal Reserve districts. The 65 suspending banks were located in 21 states.

Fourteen banks with deposits of \$13,000,000 reopened during the month.

Lands Large Order

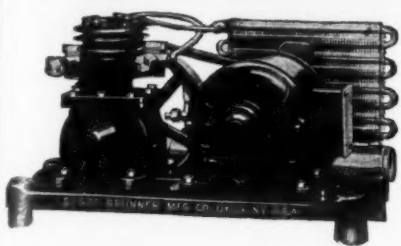


Harrison B. Fisher of Willis Co., G. E. distributor in Akron, Ohio, congratulate Charles Zernachel on receiving an order for 25 "Monitor Tops" for a Canton, Ohio, apartment.

BUYER'S GUIDE

Manufacturers Specializing in Service
to the Refrigeration Industry

SPECIAL ADVERTISING RATE (this column only)—\$12.00 per space. Payment is required monthly in advance to obtain this special low rate. Minimum Contract for this column—13 insertions in consecutive issues. All advertisements set in uniform style of type with standard border. Half-tone engravings of 100-line screen, either outline or square finish. No reverse cuts or heavy black effects. No charge for composition.



There's Profit for
You in Getting
the Facts

about

BRUNNER

High Sides and Compressors

Brunner Manufacturing Co. Refrigeration Division Utica, N. Y.

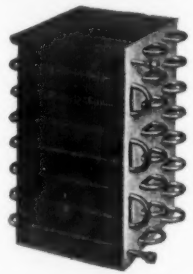
A NEW FIN COIL by PEERLESS

Wedge-locked and edge-locked aluminum fins on
tinned copper tubing for methyl chloride, sulphur
dioxide, F-12, etc.—aluminum tubing for ammonia.
Absolute Metal to Metal Contact.

A Superior Coil in which Soldered Return Bends have
been eliminated.

Priced to meet 1932 conditions.

Write—Wire for Catalog.



PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.



The PEERLESS THERMAL EXPANSION VALVE

(Pat. No. 1870990, Others Pending)

For use with Methyl Chloride
and Sulphur Dioxide

The perfect thermostatic valve. The control
always resides in the bulb due to the
patented Peerless warming method. The
PEERLESS will eliminate your expansion
valve troubles.

List Price, \$13.50. Write for bulletin.

PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.



Completely assembled and individu-
ally bagged. Ready for shipment in
your refrigerator. Write for com-
plete list of standard sizes and prices.

Hoosier

Standardized Parts

HOOSIER LAMP & STAMPING COMPANY, EVANSVILLE, IND.

We will make it for you!

We are perfectly equipped for quantity produc-
tion of light or heavy mechanical parts or units.
Precision manufacture and rapid delivery.
Unusually moderate charges.

Indian Motorcycle Co.
Springfield, Massachusetts



Our Large Stock of

REFRIGERATION APPLIANCES AND SUPPLIES
includes a full line of

RUBBER PARTS FOR ICE CREAM CABINETS

Frost Collars, Brine Hole Stoppers, Lid Rings and Knobs

Ask for our complete catalog

Melchior, Armstrong, Dessau Co. Fretz Brass & Copper Co.
116 Broad St., New York 523 Arch St., Philadelphia

YOUR ADVERTISEMENT

in this Buyer's Guide Column will be seen by distributors, dealers
and refrigerator manufacturers throughout the entire world.

SPECIAL LOW RATES

make it easy to keep industry buyers constantly informed of your
products and service.

Electric Refrigeration News
550 Maccabees Bldg. Detroit, Mich.

REQUESTS FOR INFORMATION

Please refer to the 1932 Refrigeration
Directory and Market Data Book for
a complete list of all manufacturers of
refrigeration equipment, parts, mate-
rials, supplies, and accessories; also for
all available statistical data on sales of
refrigeration equipment, distribution
methods, etc.

To obtain a copy of this book send
\$2.00 to Business News Pub. Co., 550
Maccabees Bldg., Detroit, Mich.

Advertisers will be given preference
in published answers to requests for
buyer's guide service, but a complete
list of all known suppliers will be
mailed if stamped, self-addressed en-
velope is enclosed with inquiry.

Readers who can be of assistance
in furnishing correct answers to in-
quiries, or who can supply additional
information, are invited to address
Electric Refrigeration News, mention-
ing query number.

Ice Cream Freezer

Query No. 977 (Manufacturer, Chi-
cago)—"We understand that there is a
concern in Boston by the name of Howe
which has perfected and is marketing
an ice cream freezer to be attached to
the standard type of household electric
refrigerator. Please send us its ad-
dress."

Answer—S. M. Howes Co., 511 Med-
ford St., Boston.

Bellows

Query No. 978 (Manufacturer, Penn-
sylvania)—"Please send us by return
mail the name of a manufacturer of
bellows seals."

Answer—Clifford Mfg. Co., 564 E.
First St., Boston.

Commercial Machine Specifications

Query No. 979 (Manufacturer, New
York)—"Will you please advise whether
your paper has ever published data and
specifications on commercial condens-
ing units of the following manufactur-
ers: Kelvinator, Copeland, Frigidaire,
Servel, and General Electric."

Answer—Not as a special feature, al-
though much of this information has
been published in connection with an-
nouncements of new commercial equip-
ment in ELECTRIC REFRIGERATION NEWS.

Algerian Export Figures

Query No. 980—"We notice that your
statistics on refrigeration exports for
the different European and North Afri-
can countries group Algeria and Tunis
together. We should like to call your
attention to the fact that Algeria is as
different from Tunis as it is from
Morocco, both from the viewpoints of
geography and race, as well as political-
ly, since Algeria constitutes three
French departments, while Tunis is a
protectorate.

"Also, as far as the refrigeration busi-
ness of Frigidaire is concerned (which
company does the major refrigeration
business in these areas), Algeria and
Tunis are handled by two entirely dif-
ferent distributors.

"We shall be much obliged, if you
will please list figures for Algeria and
Tunis separately in the future."

Answer—These figures are furnished
us by the U. S. Department of Com-
merce, Washington, D. C. We are ad-
vised by J. Hohn, chief of the division
of statistics, as follows:

"This combined classification has been
published in the statistics of exports
since 1922. Algeria and Tunis are both
French possessions located adjacently
on the Mediterranean coast of North
Africa. It is presumed that this was
the reason why they were combined
under one class, No. 113, in the statis-
tical classification schedule C of foreign
countries. It is not possible to secure
separate figures on exports to each
colony, as the figures are reported only
for the combined class.

"In view of the drastic reductions by
Congress in the bureau's statistical and
printing appropriations during the
present fiscal year, which from all in-
dications will continue during next year,
it is not possible at this time to expand
the statistical country list by listing
Algeria separately from Tunis.

"As the request received from your
reader for this separation is the only
one received by the bureau, it may be
assumed that the combined listing is
generally satisfactory to export indus-
tries interested in trade with these
colonies."

Pulleys and Fans

Query No. 981—"Will you please fur-
nish the names of manufacturers of
small combination V-belt motor pulleys
and fans for fractional horsepower
motors such as are used in electric re-
frigerator units."

Answer—See page 250 of the 1932
REFRIGERATION DIRECTORY and MARKET
DATA BOOK for 16 manufacturers of
pulleys; page 214 shows a list of 13 fan
manufacturers.

Compressor Oils

Query No. 982 (Distributor, New
York)—"Kindly advise the proper kind
of oil to use in sulphur dioxide and
methyl chloride compressors, also
sources of supply."

Answer—Valuable help in selecting
refrigeration oils is given by these
articles in back issues of the NEWS:
(1) a symposium on refrigeration lubri-
cation by engineers of the Standard Oil
Co., Vacuum Oil Co., and Texas Oil Co.,

Aug. 12, 1931; and (2) an explanation
of lubrication of small refrigeration ma-
chines by Standard Oil engineers, Oct.
5, 1932.

Refrigeration lubrication with par-
ticular reference to machines using sul-
phur dioxide is treated in an article by
C. W. Johnston, general manager of the
Virginia Smelting Co., in the Nov. 4,
1931, issue.

For lubrication of methyl chloride
compressors, we are offering below the
recommendations of Roessler & Hass-
lacher Chemical Co. on that subject:

"Two classes of lubricants have been
used for Artic (methyl chloride) refrig-
erators. Lubricants of one class are
soluble in Artic, those of the other class
are insoluble.

"Glycerine is only soluble in methyl
chloride to the extent of 0.04 per cent
by weight at 25° C.; and dissolves but
0.4 per cent by weight of methyl chlo-
ride at the same temperature. This
insolubility together with a high specific
gravity, causes a mixture of the two
liquids to separate readily into two
layers (glycerine forming the lower
layer).

"Although glycerine has good lubri-
cating properties yet it absorbs moisture
up to 50 per cent of its own weight, so
that it cannot be used unless carefully
protected from the atmosphere.

"Another objection to glycerine as a
lubricant is that it sometimes has been
a cause of corrosion. It is probable that
the corrosion was caused by impurities
in the glycerine. Because of these ob-
jections glycerine has been almost en-
tirely replaced by mineral oils for lubri-
cating Artic refrigerating machines.

"Although mineral oils are miscible
with Artic in all proportions, neverthe-
less actual practice has shown that
many of these oils are very efficient
lubricants. The Artic in the compres-
sor at the compressor temperature and
pressure does not sufficiently dilute the
oil to reduce materially the lubricating
efficiency of the oil.

"Macintire, investigating mixtures of
oil and methyl chloride, found that the
viscosity of the oil was lowered, but not
to the extent that its usefulness as a
lubricant was impaired. He also deter-
mined the effects of oil carried along
with the methyl chloride into the evapo-
ration chamber. Such solution of oil
and methyl chloride were found to boil
at temperatures only slightly higher
than pure methyl chloride and to have
but little effect on the temperatures
reached in the refrigerator.

"Some of the oils that have given good
results as lubricants in Artic refrig-
erators conform to the following tests:
Flash point 320 to 400° F.; cold test -10
to -20° F.; low sulphur content (below
0.15 per cent); no saponifiable matter;
viscosity 150 to 310 second (Saybolt) at
100° F. Oils that do not conform to
these tests may be entirely suitable ex-
cept that, as indicated by experience,
satisfactory oils will not contain more
than traces of sulphur and no saponifi-
able matter."

LARGE FRIGIDAIRE PLACED IN NEW JERSEY SCHOOL

BOONTON, N. J.—Prospective brides
taking domestic science in the new
Boonton high school enjoy the advan-
tages of the largest size Frigidaire, ac-
cording to the Jersey Central Power
and Light Co., Frigidaire distributor of
this city.

THE CONDENSER

PAYMENT IN ADVANCE is required
for advertising in this column. The
following rates apply:

POSITIONS WANTED—Fifty words
or less, one insertion \$2.00, additional
words four cents each. Three inser-
tions \$5.00, additional words ten cents
each. **ALL OTHER CLASSIFICATIONS**
—Fifty words or less, one insertion
\$3.00, additional words six cents each.
Three insertions \$8.00, additional words
sixteen cents each.

REPLIES to advertisements with box
numbers should be addressed to the
box number in care of Electric Refrig-
eration News, 550 Maccabees Building,
Detroit, Mich.

POSITIONS WANTED

ENGINEER—14 years active in domestic
and commercial refrigeration work. Expe-
rience includes thorough knowledge of thermo-
dynamics and mechanics of gases, design of
units, compressors, boilers and accessories
(expansion valves, floats, thermostats, etc.),
engineering management, laboratory, pro-
duction and service work. Position desired
with unit or parts manufacturer. References.
Box 511.

REFRIGERATION MAN. Well versed in
compressor and coils, (either system), wishes
to make connection with reliable company.
Also has several ideas which will beat
what's on the market in this line. Box 515.

COMMERCIAL SALES ENGINEER—gradu-
ate engineer, age 35, desires position with
manufacturer or large distributor. During
past six years connected with nationally
known refrigeration manufacturer in fol-
lowing capacities: sales and service instructor
(editor of Service and Commercial Sales
Manuals, Parts Catalogue) commercial sales
engineer. National service and sales man-
ager. References. Box 518.

Trained Men Available

When in need of practical, trained shop mechanics,
sales, installation or service men, patronize this FREE
Placement Bureau. We have competent, trained
graduates available in every locality, to meet your
requirements. With or without experience. No charge
to the men or to you. Write, phone or wire.

Utilities Engineering Institute

Placement Division

Dept. 4112 404 No. Wells St., Chicago

OLDEST LEONARD ICE BOX FOUND IN NEW YORK AREA

GREENPORT, L. I., N. Y.—The old-
est Leonard ice box in the metropolitan
area, which includes Long Island, be-
longed to the Misses Vail of Orient, L. I.,
who claim that their box has been in
use for more than 40 years.

Early in the summer, E. B. Latham
& Co., exclusive distributor for Leonard
Refrigerator Co. in the metropolitan ter-
ritory, started to search for the oldest
ice box in its district, offering a new
electric refrigerator for the oldest one,
according to the rules of the "Oldest
Leonard Ice Box" contest sponsored by
the factory.

Having closely examined their antique
ice box for labels setting forth dates,
the Misses Vail further confirmed their
findings by digging out of an old family
diary concrete evidence that the box
had been purchased prior to 1895.

The aged box, still fit for further
service, being in perfect condition both
inside and out, was displayed at the
Queens and Nassau County Mineola
Fair, and will be displayed by Leonard
dealers throughout Long Island as well
as in New York and New Jersey.

COMBINATION SUBSCRIPTION RATES

How to save money on your subscription order

| NO. | PUBLICATIONS | YOU PAY | YOU SAVE |
|-----|---|---------|----------|
| 1 | Electric Refrigeration News (1 Year) and Refrigeration Directory and Market Data Book | \$4.00 | \$1.00 |
| 2 | Electric Refrigeration News (2 Years) and Refrigeration Directory and Market Data Book | \$6.00 | \$2.00 |
| 3 | Refrigerated Food News (1 Year) and Refrigeration Directory and Market Data Book | \$2.00 | \$1.00 |
| 4 | Refrigerated Food News (1 Year) and Electric Refrigeration News (1 Year) | \$3.50 | \$.50 |
| 5 | Refrigeration Directory and Market Data Book and Electric Refrigeration News (1 Year) and Refrigerated Food News (1 Year) | \$4.50 | \$1.50 |
| 6 | Refrigeration Directory and Market Data Book and Electric Refrigeration News (17 Weeks) | \$2.00 | \$1.00 |

Order by number. Use coupon below. These rates for U. S. only.

Group Order Rates for U. S. and Foreign Countries

| PUBLICATIONS | NUMBER | UNITED STATES* | CANADA† | ALL OTHER COUNTRIES |
|-----------------------------|------------------------|----------------|---------|--------------------------------------|
| Electric Refrigeration News | 1 subscription | \$3.00 | \$6.00 | \$4.00 These foreign 3.75 rates will |
| | 5 or more, each . . . | 2.75 | 5.75 | 3.75 rates will |
| | 10 or more, each . . . | 2.50 | 5.50 | 3.50 be increased |
| | 20 or more, each . . . | 2.25 | 5.25 | 3.25 on or before |
| Refrigerated Food News | 1 subscription | \$1.00 | \$2.00 | \$1.50 These foreign 1.45 rates will |
| | 5 or more, each . . . | .95 | 1.95 | 1.45 rates will |
| | 10 or more, each . . . | .90 | 1.90 | 1.40 be increased |
| | 20 or more, each . . . | .85 | 1.85 | 1.35 on or before |
| BOTH PAPERS | 1 subscription | \$3.00 | \$7.00 | \$4.00 These foreign 3.75 rates will |
| | 5 or more, each . . . | 3.25 | 6.75 | 4.75 rates will |
| | 10 or more, each . . . | 3.00 | 6.50 | 4.50 be increased |
| | 20 or more, each . . . | 2.75 | 6.25 | 4.25 on or before |
| | 50 or more, each . . . | 2.50 | 6.00 | 4.00 Jan. 1, 1933. |

*U. S. and Possessions and Pan-American Postal Union Countries.

†High rates for Canada are due to Canadian tariff of 5c per copy.

SUBSCRIPTION ORDER

BUSINESS NEWS PUBLISHING CO.,
550 Maccabees Bldg., Detroit, Mich.

☐ Enclosed is remittance for \$.....
☐ Please enter my order for COMBINATION OFFER NO. at \$.....
☐ Enter subscription to Electric Refrigeration News ☐ 1 Year \$3.00 ☐ 2 Years \$5.00.
☐ Enter subscription to Refrigerated Food News ☐ 1 Year \$1.00 ☐ 2 Years \$1.50.
☐ Send 1932 Refrigeration Directory and Market Data Book. \$2.00 per copy.

Name

Address

City

State

11-2-32

G. M. MAN TALKS ON DEPRESSION LESSONS

(Concluded from Page 1, Column 1)

shop, had one advantage over the modern manufacturer. He knew the personal requirements and desires of every one of his customers.

"Under the present mass production system, with products being given nationwide distribution, it is difficult to make a business sensitively attuned to the wants of the buyer.

"It should be the task of the engineering department, production department, sales department, and dealer organization to coordinate their efforts to the end of finding out what styles and types of products the consumers want and need the most, and then to design products to fill such wants or needs.

Design might be properly defined as the coordination of manufacture to the tastes, desires, temperaments, nerves, and physique of the individual for whom the product is intended."

Study Riders' Reactions

In this connection, Mr. Weaver pointed out that research workers for General Motors Corp. were making extensive use of tests conducted by a well-known neurologist on the reaction of individuals when taken for an automobile ride.

"All departments in a manufacturer's organization," the speaker stated, "are striving for one main objective—to get the customer's mind to react in a way that will be most favorable to the manufacturer's interests.

"Before we can use the wonderful sales tools that we have developed, we must learn more about our customer's thinking," Mr. Weaver emphasized.

Turn to Psychology

Market research specialists, Weaver pointed out, are turning to a study of psychology to learn more about what is going on in the mind of Mr. Average Man. The speaker pointed out the basic principles or facts which psychologists have developed, namely, the deep-seatedness of man's instincts, the powerful part that habit plays, and the peculiar tricks played by defects in our sensory organs, usually caused by conditioning.

Early Greek civilization took cognizance of these defects in man's sensory organs, and actually built some of its temples in irregular shape, which shape, due to the topography of the land on which the temple was built, appeared to the average man as the perfection in architectural design for which the Greek builders were actually striving.

Cites University President

"Market research should also define methods of thinking, the way in which customers arrive at decisions," Mr. Weaver averred.

"President Walter Dill Scott of Northwestern university has made a simple classification of the methods of thinking which serve as a basis for making decisions. He has titled each classification with the name of a well-known historical character, whose history characterizes the type of thinking in the particular classification."

Methods of Thinking

The various methods of thinking used to arrive at a decision or a conclusion are as follows:

1. The Bismarckian type of decision, which is based on power, authority, strength of will.
2. Catharine the Great type of decision based on emotions, sentiments, sympathies, and desires.
3. The Louis XVI type of decision, one of vacillation, in which the individual leans on opinion, suggestion, and influence.
4. The Richard Coeur De Lion, or gambler method, in which the decision is based on chance, a hunch, a flip of a coin.
5. The Benjamin Franklin or reasoning method, in which the individual carefully and without prejudice marshals the facts on both sides of the question, and lets the weight of the evidence make the decision for him.

LEONARD OPENS NATIONAL SALES CONTEST

(Concluded from Page 1, Column 3)

10 sales prior to Dec. 1, an award of \$50 will be given; to the second, \$30; and to the third, \$10.

"This contest will enable every hustler to get some extra compensation," says Taylor. "And extra compensation certainly comes in handy at Christmas time."

"Some of the high men in the contest staged late this summer, which was run on the same principles as this one, made as many as 22 individual sales in the six weeks' period, gaining for themselves merchandise and cash awards," states Taylor.

G. E. DISTRIBUTOR MOVES TO SCHENECTADY

SCHENECTADY, N. Y.—A. Wayne Merriam, Inc., General Electric distributor, formerly located in Albany, N. Y., has moved its general office and product department to 108 Erie Blvd., here.

Kelvinator's Key Specifications

This table gives installed-in-Detroit prices and key specifications on the 1933 Kelvinator line of household electric refrigerators. Please clip and paste this list over the Kelvinator prices appearing in the comparative price table on page 4 of the Oct. 26 issue. Prices quoted for Kelvinator at that time were cleanup prices on floor samples of the 1932 line in Detroit. No more of these floor samples are available.

| | KELVINATOR | | | | | |
|-------|--------------------|---------------------|-----------------------|--------------|--------|----------------------|
| Model | PRICE Installed | SIZE Net Cu. Ft. | SHELVES Square Ft. | ICE Cubes | Weight | FINISH Porc.-Lac. |
| R-42 | \$114.50 | 4.18 | 8.38 | | 3.4 | Lac. |
| R-64 | 152.00 | 6.37 | 13.25 | 63 | 5.1 | Lac. |
| K-40 | 141.50 | 4.1 | 8.6 | 63 | 5.1 | Lac. |
| K-50 | 171.50 | 5.2 | 9.9 | 81 | 6.8 | Lac. |
| K-60 | 197.00 | 6.2 | 13.7 | 81 | 8.25 | Lac. |
| K-80 | 277.50 | 8.2 | 16.1 | 108 | 11.0 | Lac. |
| PK-40 | 168.50 | 4.1 | 8.6 | 63 | 5.1 | Porc. |
| PK-50 | 198.50 | 5.1 | 10.8 | 81 | 8.25 | Porc. |
| PK-60 | 227.00 | 6.1 | 12.9 | 108 | 11.0 | Porc. |
| PK-70 | 267.00 | 7.3 | 14.9 | 108 | 11.0 | Porc. |
| PK-80 | 307.50 | 8.2 | 16.1 | 108 | 11.0 | Porc. |
| D-55 | 256.00 | 5.6 | 12.2 | 54 | 5.5 | Porc. |
| D-65 | 296.00 | 6.6 | 13.3 | 81 | 8.25 | Porc. |
| D-75 | 336.50 | 7.6 | 16.5 | 108 | 11.0 | Porc. |
| D-90 | 392.00 | 9.2 | 18.2 | 108 | 11.0 | Porc. |
| D-120 | 495.00 | 12.5 | 25.6 | 162 | 16.5 | Porc. |
| D-150 | 575.00 | 15.06 | 26.4 | 189 | 19.25 | Porc. |
| D-230 | 725.00 | 23.0 | 41.9 | 243 | 24.75 | Porc. |

Guarantee on both cabinet and system—one year.

55 REFRIGERATORS SOLD AT CAMDEN, N. J., SHOW

CAMDEN, N. J.—Fifty-five household units were sold from the floor, and each exhibitor received a prospect list of approximately 10,000 names, as a result of the electric refrigeration show held here during Electric Refrigeration Week by the Electrical League of South Jersey in connection with the annual retail exhibit sponsored by the Camden County Chamber of Commerce.

More than 30,000 people attended the show which was held in the city's convention hall. This building is L-shaped, and the league's exhibit occupied the wing known as the annex.

Owing to the large amount of floor space available, exhibitor members of the league were granted the privilege of displaying other electric appliances beside refrigerators. Several exhibitors showed ranges, radios, and ironers in their booths.

Newspaper advertising space was used, as well as billboards, window posters, and the radio to make the public aware of the show. The Westinghouse robot, "Willie Vocalite," attracted much attention.

The total cost of the show was \$1,474.60, and was defrayed by the league's appropriation for its all-year refrigeration campaign. To this campaign fund each of the 10 distributors subscribed \$300, and the Public Service Electric & Gas Co., \$3,000, making a total of \$6,000.

Models of the following refrigerators were on exhibition at the show: Kelvinator, Norge, General Electric, Majestic, Leonard, Westinghouse, Frigidaire, Coldspot, Servel, Gibson, and Mayflower.

DRY GOODS ASSOCIATION OPPOSES FREE PREMIUMS

NEW YORK CITY—Offering premiums to consumers is definitely a poor retail practice in the opinion of the National Retail Dry Goods Association, and that organization has taken a militant stand against the introduction or spread of this practice in retail stores, according to an article in a recent issue of *Domestic Commerce*.

The association says: "If some of these high-powered schemes to get business could be confined to the originating store, it is just possible that they might produce trade, but they are quickly spread to other stores, inevitably to return like a specter to haunt the sponsoring store.

"Present conditions are fertile for breeding all sorts of 'give something' schemes to increase volume. Business conditions are bound to get better sooner or later, but unsound business practices, once entered into, cannot be abandoned at will."

It points out further that, "Service requests, which today seem like impositions on the part of the public, were in most cases originated by some retail store in an endeavor to secure increased patronage, without regard to the cost that must eventually be paid. Should premium giving again become a retail problem, the retail trade again must take the blame."

MAJESTIC REFRIGERATORS COOL TOMATO JUICE

PHILADELPHIA—Campbell Soup Co., Camden, N. J., used three Majestic refrigerators to keep its tomato juice "just right" for serving to the public at the recent Philadelphia Food Show, according to G. Albert Rhimer, advertising manager, Peirce-Phelps, Inc., Majestic distributor here, who installed the equipment.

Two refrigerators were used to store the tomato juice which was being served, while the third, a 10-cu. ft. box, was kept in the rear of the display for storage purposes.

TAYLOR TO ATTEND PLAN COMMITTEE MEETING

DETROIT—A. M. Taylor, merchandising director of the Leonard Refrigerator Co., will be in attendance at a special meeting of the plan board of the Electric Refrigeration Bureau in Chicago Thursday, Nov. 3.

Kansas City Winner of Norge Prize Named

ATCHISON, Kan.—One of the \$500 cash prizes awarded in the Norge Rolloff refrigeration cross-word puzzle and essay contest was won by Mrs. Hugo Orlopp of this city.

Presentation of the check was made here by J. G. Suor, vice president of Moser & Suor, Inc., Kansas City, Mo., Norge distributor for western Missouri and the state of Kansas.

Refreshments prepared in a Norge refrigerator were served by members of the staff of Theo. Inten Furniture and Carpet Co., Norge dealer in Atchison.

More than 1,000 puzzle books and essays on "Why I Prefer the Norge" were received by Moser & Suor, Inc., according to M. S. Tinsley, manager of the distributorship.

NEW ORLEANS OFFICIALS OPEN NEW PUBLIC MARKET

NEW ORLEANS—The Jefferson Market, completely equipped with Copeland refrigeration, was formally opened by Mayor T. Semmes Walmesley and other civic leaders with much ceremony, recently, according to C. V. Bankston, sales manager, Edw. N. Eberling & Co., Inc., Copeland distributor here, who made the installation of refrigeration equipment.

Other public officials who took part in the ceremonies upon the opening of the public market were Commissioners A. Miles Pratt, Dr. Arthur Gomilla, Fred A. Earhart, and Jos. Skelly; Theodore Grunewald, director of public markets; Sam Stone, Jr., architect, and H. W. Bond, contractor of the market.

P. H. Ferguson, secretary of the New Orleans Butchers and Meat Dealers Association; Emile Wendell, National Refrigerator and Fixture Co., fixture contractor; and Wayne B. Wands and C. V. Bankston, Edw. N. Eberling & Co., Inc., refrigeration contractors.

The refrigeration equipment in the new market, according to Bankston, is as follows: six model T-2375 condensing units for meat, vegetable, and sea food stands; and a seventh T-2375 for center island work, using several types of boxes and cases.

Two 3-section coolers, measuring 32x8x12; two 2-section coolers, measuring 24x8x12; and two other coolers 14x8x12; 220 ft. of top cases using WI type Larkin coils, and two 12-ft. fish and sea food cases using Larkin vacuum plate coils.

REX COLE BRANCH SALES HEADS EXCHANGE POSTS

NEW YORK CITY—A shake-up in the retail department of Rex Cole, Inc., General Electric distributor here, has been effected by Paul H. Hichborn, manager. Four sales directors have exchanged posts.

The four men effected were Robert G. Williams, formerly of Flatbush, William J. Clark, who used to lead the Queen Village contingent, Nathaniel C. Dryden, who has for the last month been in Long Island City, and Victor S. Backstrom of Jamaica.

Under the new arrangement, Williams takes over the Jamaica division. Clark succeeds Williams at Flatbush. Dryden may be seen behind Clark's desk in Queen's Village, and Backstrom has taken over Long Island City.

"The change," according to Hichborn, "is expected to broaden the outlook of all the sales directors involved, and to spur the divisions on to greater efforts."

"The natural response of each of these men in finding himself in charge of the division of a 'friendly enemy' will be to try to break all records ever set by that particular division. The change at once heightens the spirit of rivalry that has always existed among the divisions, and knits the components of the retail department more closely together."

STOP EATING

up your capital. \$30.64 starts you locally in permanent office and industrial appliance business. Repeat orders. Agency arranged. Investment secured. Only sincere workers invited to apply. State references and qualifications, territory desired. Markwell Mfg. Co., 200 Hudson St., New York.

Michigan Firms To Discuss Problems

DETROIT—A plan to secure cooperation of Michigan electric refrigerator distributors in solving current merchandising problems has been launched by W. B. Muse, refrigeration department manager of Buhl Sons Co., Michigan Leonard distributor here.

Mr. Muse has just sent to managers of seven distributorships operating in the Michigan territory a letter suggesting that the group meet at regular intervals to discuss distribution problems and establish more friendly inter-distributorship relations.

It is the Leonard man's thought that if such a plan can be materialized, the move may be carried further by later sponsoring discussion meetings of competitive dealers and salesmen.

Complete text of Mr. Muse's letter to distributors follows:

"Gentlemen: "I am sure you have found several things existing in the refrigerator industry locally that, if allowed to continue, are going to be disastrous to us all."

"I believe that if we were to get together as a group of distributors, many problems could be solved at their source rather than have numerous things happen which will be damaging to our future business of electric refrigeration."

"I believe that we could very well take the time once a week or month to sit down and talk over certain policies and phases of our business, and arrive at an understanding and working agreement that would avoid a lot of costly conflict."

"If you feel as I do about this, I will be glad to have you drop me a line, and we will try and arrange a suitable date for a number of the distributors of leading makes of refrigerators to get together and at least get acquainted and know what each other looks like. May I have your reaction to this, after giving it some thought?"

CASWELL GETS ORDER FOR 24 G. E. ELECTRIC KITCHENS

(Concluded from Page 1, Column 4)

be equipped with a General Electric refrigerator, dishwasher, and G. E. Hot-point range.

Mr. Walker, instead of contracting to pay for the entire 24-suite equipment through the finance company, agreed to pay 50 per cent of the cost upon completion of the installations.

An unusual situation arose upon closing this deal. A plumbing contractor who already had been called in to install new sinks in all of the suites, agreed to accept cancellation of his contract; to drop the drain pipes seven inches in all of the apartments; and pull out the gas lines to make room for electrical conduits. The plumbing contractor agreed to this because he realized the free publicity he would obtain.

The deal was closed by Apartment House Manager Frank Carson who, since his association with Caswell, Inc., has distinguished himself several times in closing large and unusual contracts.

As far as is known, only one General Electric distributor in the country has installed more than 24 kitchens at one time. This distributor is C. L. McCrea of the National Electrical Supply Co. in Washington, D. C., who a short time ago made an installation of 60 General Electric kitchens.

REX COLE HOST TO SALES CAMPAIGN WINNERS

NEW YORK CITY—In celebration of sales victories won in the month of September, Flushing, Queens Village, and Bond Street divisions of Rex Cole, Inc., General Electric distributor here, were entertained recently at a dinner given at the New York Athletic Club, Travers Island.

Rex Cole, president of the distributorship; Robert Stevenson, vice president and general manager; E. H. Campbell, sales promotion manager; Paul H. Hichborn, retail manager; and William F. Bishop greeted and lauded Sales Directors George D. Copley, William J. Clark, and Adrian Black, who rated respectively, first, second, and third for the month.

Forty-five were present at the dinner, including the complete membership of each division.

DEALERS! ASSEMBLERS!

A chance for you to buy compressors or complete units from the manufacturer at an interesting price.

KING KOLD CORP.
2300 S. Western Ave.
CHICAGO

555 STAGES ANNUAL DEALER CONVENTION

LITTLE ROCK, Ark.—The annual convention of household utilities dealers in Arkansas was held here, recently, by 555, Inc., state distributor of Kelvinator electric refrigerator, Atwater Kent radio, Thor washer and ironer, Sunbeam and Knapp-Monarch electrical appliances, and Cunningham radio tubes.

Starting at 1:30 p. m. the "Inaugural" convention ended with a banquet and vaudeville program at 8:30 p. m. Paul D. Sowell, manager of 555's wholesale household utilities division, was in charge of the event.

Kelvinator Manager Present

Factory representatives who participated in the convention were: S. R. Kemp, district manager, Kelvinator Sales Corp., Detroit; H. T. Stockholm, district manager, Atwater Kent Mfg. Co., Philadelphia; and J. R. Slocumb, with E. T. Cunningham, Inc., Dallas, Texas.

The theme of the convention was "Bring Back Prosperity," and was dramatized, at the opening of the meeting, by a large cut-out of a freight train, electrically lighted. The locomotive was 555, the coal in the tender was labeled "work" and each box car contained a load of the various items of merchandise distributed by 555. On the caboose the name of the train was revealed as "The Prosperity Special."

In opening the convention, Chairman Sowell appeared, attired in an engineer's uniform. The curtains were drawn and the train was revealed to the accompaniment of a sound effect of a train starting up and gradually increasing its speed.

Burlesque Demonstration

Following the banquet in the evening, a burlesque demonstration of a low-priced electric refrigerator, known as the "Arctic Blizzard" was made by Frank Burke, manager of the retail household utilities division of 555.

During the course of the sales-room demonstration everything in the world happened to this machine, culminating with an explosion, which blew the top and sides off, and completely demolished the interior of the box.

'Standard Rating Scale'

One of the features of the convention was a "Standard Rating Scale for Dealers," patterned on the Kelvinator standard rating scale for selecting an electric refrigerator. This was compiled by Frank Burke, and dealers were urged to take it home and let their wives grade them by the scale.

Some of the questions on the test were, "Do you demonstrate in the home?" "Do you take advantage of every opportunity to talk favorably about your merchandise?" "Do you co-operate with your jobber and manufacturer by at least trying the merchandising plans offered you by them?"

In all, there were 20 questions. If the question could truthfully be answered "Yes" by the dealer, he received a grade of five for the question. If the answer was not "Yes" he received a mark of from 5 to 0. The total showed how efficient a dealer he was.

NEW, LOWER PRICES ON McCORD COMMERCIAL EVAPORATORS

WRITE FOR NEW McCORD CATALOG GIVING LOWER PRICES ON McCORD EVAPORATORS. INCREASED DEMAND AND LOWER METAL COSTS MAKE POSSIBLE A SUBSTANTIAL PRICE REDUCTION. THE SAME SATISFACTORY McCORD ALL-COPPER COIL WITH FLEXIBILITY OF ARRANGEMENT TO MEET HEAT, LOAD AND SPACE REQUIREMENTS.

McCORD RADIATOR & MFG. CO. DETROIT, MICH.

WRITTEN TO BE READ
ON ARRIVAL

Engineering Section

IN TWO PARTS
PART TWO

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

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THREE DOLLARS PER YEAR

ENGINEERS PLAN WINTER MEETING IN NEW YORK CITY

Sessions To Be Held In
Hotel New Yorker
Dec. 7 To 9

NEW YORK CITY—Speakers have just been announced for the annual winter meeting of the American Society of Refrigerating Engineers, to be held at the Hotel New Yorker, Dec. 7 to Dec. 9. Plans for this convention have been somewhat simplified from the practice of former years—there will be a three days' meeting instead of four, with morning and afternoon sessions, and one afternoon open for an inspection trip. Thursday evening is to be devoted to a stag dinner instead of the usual jamboree and dance.

The program follows: Registration opens at 9 a. m. Wednesday, Dec. 7. At 10 o'clock the first session will begin on "Air Conditioning," Glenn Muffy president of the society, presiding.

"Water as a Refrigerant" will be the topic of a paper by John Everetts, Jr., New York City, at this session. George B. Bright, consulting engineer, Detroit, will discuss "Comfort Cooling with Ice in 1932." J. A. Goff, assistant professor, mechanical engineering department, University of Illinois, will give a paper on "Air Conditioning Theory: Classroom Methods of Presentation."

At 1 o'clock there will be a welcome luncheon.

The second session on "Thermal Prob-
(Concluded on Page 3, Column 1)

ROE SEES OBSTACLES TO STANDARD RATINGS

NEW YORK CITY—Little possibility of electric refrigerators being sold on a stated performance status in the near future, was seen by C. H. Roe of Electrical Testing Laboratories speaking before the New York section of the A.S.R.E. at its October meeting last Thursday.

H. M. Wilkinson of Melchior, Armstrong, Dessau & Co., was the second speaker of the evening, leading a discussion on the history of the development of the fractional-ton refrigerator.

Harry D. Edwards, serving as the temporary chairman of the meeting, introduced Mr. Wilkinson first.

Wilkinson said at the outset, that most of his short talk had been prepared from information furnished by
(Concluded on Page 3, Column 1)

PUFFER-HUBBARD OFFERS NEW VENTILATED CABINETS

MINNEAPOLIS — Puffer-Hubbard Mfg. Co. has just completed negotiations with Charles A. Moore whereby it will manufacture household and commercial cabinets provided with the Moore system of ventilation, R. T. Phillips, president, announces. Covered by some 57 patents issued to Mr. Moore, the system is designed to eliminate shrinkage, dehydration, and transfer of odors between foods in storage by the introduction of fresh air.

Introductory models are equipped with the Moore system in a manner that does not change the outward appearance of the cabinet, Mr. Phillips states. "At the upper side of the box, and in line with the top of the liner, is an opening which leads to a flue or passage that penetrates the insulation to the outside surface of the liner."

"From this point, and extending down along the liner, this flue or passage continues until it reaches a point just above
(Concluded on Page 3, Column 2)

ILLINOIS PROFESSOR TO RECEIVE GRASSELLI MEDAL

BROOKLYN—Prof. George L. Clark of the University of Illinois will be awarded the Grasselli medal at a meeting of the American section of the Society of Chemical Industry and other co-operating societies, to be held in the Westinghouse Auditorium, Grand Central Palace, New York City, on Nov. 4 at 8:15 p. m.

To Maintain Quality in SO-2



One of Virginia Smelting Co.'s laboratories, West Norfolk, Va., where a staff of chemists checks each shipment of refrigeration-grade sulphur dioxide. Left to right above are: C. L. Hamilton, inspector; N. L. Harris, chemist; Aaron Loney, assistant; H. L. Goddin, supervisor; W. F. Pond, analyst; B. E. Yaffey, control analyst.

BRUNNER BRINGS OUT COMMERCIAL MODELS

UTICA, N. Y.—Several new condensing units have been added to the Brunner line this year, extending its sizes up to 1½ hp. commercial machines, according to M. H. Pendergast, of the refrigeration division, Brunner Mfg. Co.

Smallest in the commercial range is high side model S-1380 which is rated at 166 lbs. of ice melting capacity per day with methyl chloride, or 140 lbs. with sulphur dioxide. This one-cylinder model has a bore of 1½ in. and a stroke of 1½ in. It is driven by a V-belt from a ¼-hp. motor.

Next larger is model AT-2540, with two 1½x1½ in. cylinders. This machine is driven with a V cog belt by a 1/3-hp. motor. Condenser is of the finned tube, air-cooled type. With a condensing temperature of 104° F., and a 5° evaporating temperature, the machine is rated at 255 lbs. i.m.e. per day, using methyl chloride.

High side model AY-3360 has the same compressor as AT-2540, but a ½-hp. motor. Operating at 525 r.p.m., and using methyl chloride for refrigerant, the machine will produce 385 lbs. i.m.e. per day, operating in a 104° condensing temperature, and a 5° F. evaporating temperature. Details have not yet been announced on the larger Brunner commercial sizes.

COROZONE CO. ANNOUNCES NEW HUMIDIFYING CABINET

CLEVELAND—A new "Aquazone" humidifying cabinet, equipped with a Corozone device for ionizing and deodorizing the air, has just been introduced by the Corozone Co. here.

Built in a cabinet 41 in. high, and 17½ in. square, the new winter air-conditioning apparatus has a six-gallon water reservoir with an automatic float which feeds water to a revolving water wheel.

Room air is drawn in by a fan, forced across the water wheel, and discharged into the room through a vertical grille in the front of the cabinet. No water lines or other connections are required, A. W. Conley, president of the company, states.

Approximately 300 cu. ft. of air per minute can be treated by the device. It is built to sell for less than \$100.

EDWARD BARGER OF COPELAND TO HEAD DETROIT A.S.R.E.

DETROIT—Edward Barger, factory manager of Copeland Products, Inc., has been elected president of the Detroit section of the A.S.R.E. for the coming season. Other officers are Frank West, first vice president; Hugh E. Keeler, second vice president; Frank B. Riley, treasurer, and John T. Schaefer, secretary.

Symphonic Band Back On Armco Iron's Radio Program

MIDDLETOWN, Ohio—The Armco symphonic band returned to the air last week over Station WLW, Cincinnati, for its fall and winter programs.

Under the baton of Frank Simon, this band of skilled musicians has entertained an invisible audience for the past three years. Requests for the resumption of these programs have been received from all parts of the country.

These half-hour concerts will be introduced each Tuesday night, at 9 o'clock, with martial strains from Tchaikowsky's Fourth Symphony.

MUELLER FITTINGS TO BE MADE IN CANADA

PORT HURON, Mich.—Streamline refrigeration fittings will be manufactured in Canada by the Canada Wire and Cable Co., Ltd., Leaside, Ontario, according to an agreement just consummated between that company and the Mueller Brass Co. here.

The Canada Wire and Cable Co. is a manufacturer of wire cables, ropes, and electrical specialties, and has some 25 salesmen covering the Dominion from sales offices in Toronto, Montreal, Winnipeg, Calgary, Regina, Vancouver, and Halifax.

W. Horsfall, president, and W. H. Marsh, vice president, state that they expect to have production machinery and patterns ready to produce Streamline fittings within the next six weeks.

HEAT PUMP IS FOUND ECONOMICAL IN WEST

LOS ANGELES—Reporting that the application of the reversed refrigerating cycle as a heat pump to heat the Southern California Edison Bldg. was practical and economical last winter, H. L. Doolittle, chief designing engineer of the company, announces that additional heating equipment is now being installed so that the entire building can be heated by the system next winter.

"When the building was first planned," Mr. Doolittle said, "it was decided to install such additional equipment as would be needed to try out the heat pump principle of using refrigerating machines for heating purposes. With the exception of air heater, all necessary equipment for making the trial was part of the regular air-conditioning system."

"Equipment used during the tests consisted of a 12-ton methyl chloride rotary compressor, a 2,750-sq. ft. condenser, a 2,250-sq. ft. vertical tube cooler, a 10,500-sq. ft. fin tube heater, and a two-stage air washer with the necessary pumps and auxiliaries."

Mr. Doolittle describes the heating cycle of operation as follows:

The refrigerant, after being compressed, is passed to the condenser where heat is removed by condensing water, condensing the refrigerant to a liquid. Heat given up by the refrigerant then exists in the condensing water which is pumped through a fin-tube heater—installed to heat air supplied to the building.

Meantime, the liquid refrigerant is forced through an expansion valve into a water cooler; this cooled water is then
(Concluded on Page 4, Column 5)

DETROIT UTILITY REPORTS ON AIR COOLING PLANTS

McLay Gives Operating
Data On 5 Trial
Installations

FRENCH LICK SPRINGS, Ind.—Installation and operating cost data of five air-conditioning systems used last summer in commercial offices of the Detroit Edison Co. were presented before the Great Lakes Section of the N.E.L.A. here recently by A. D. McLay, power sales engineer for the Detroit utility.

The equipment was installed in the five offices, first, to observe the operation from the standpoint of power consumption, and second, for its educational effect upon customers of the company who came into the offices to pay their bills.

The first installation described was the Farmer St. office in downtown Detroit where 57,000 cu. ft. of space was cooled by ice water pumped through fin-tube coils in air ducts. The maximum cooling load was 20.7 tons of refrigeration, Mr. McLay reported.

The office was used from 8 a. m. to 5 p. m., and had a lighting load of 18.3 kw. During the month of July, 1932, the system consumed 119.6 tons of ice, and in August, 116.2 tons, with a maximum consumption in one day for the summer of five tons. The average temperature recorded by the U. S. weather bureau for July was 72.8° F., and for August, 73° F.

The ice tank for this installation was 14.5x8x7.5 ft. in size, insulated with 2 in. of corkboard. The system cost \$6,100 to install, he stated.

Figuring that the fan and pump motors used 25 kw. per day, and estimating that 350 tons of ice would be consumed each season, Mr. McLay computed 21,000 kw. as the power required to manufacture that amount of ice, and 2,500 kw. as the motor consumption, giving a total of 23,500 kw. as the
(Concluded on Page 4, Column 1)

BUCKEYE FILES REPLY TO KELVINATOR SUIT

CLEVELAND—Official answer has been filed by Domestic Industries, Inc. of Mansfield, manufacturer of Buckeye and Richland electric refrigerators, to the patent suit brought by Kelvinator Corp. alleging infringement of patents No. 1,329,348 and 1,499,740 on shaft seals for refrigeration compressors.

The suit was started on May 14, 1932, in the U. S. District Court, Northern District of Ohio, eastern division, in equity No. 4259.

Domestic Industries' answer contends that Kelvinator's patent No. 1,329,348 (issued to E. J. Copeland) is invalid, and asserts that what Mr. Copeland purported to patent is merely a new use in a particular kind of a machine, of a previously patented bearing material (Genelite, patented by Emery G. Gilson with patents No. 1,071,044 and 1,177,407).

With respect to the other patent involved, No. 1,499,740, issued to F. H. Kolbe, Domestic Industries' answer alleges that it is invalid on the grounds that it is an aggregation of claims covered by earlier patents. The answer cites 21 previous patents to show a case for prior invention of shaft seals, and parts and materials thereof.

The answer sums up its arguments by asking the court for dismissal of the case.

DALLAS STORE INSTALLS 20 TONS FOR AIR COOLING

DALLAS, Tex.—A total of 200 tons of refrigeration has been installed in the Neiman Marcus Specialty shops here to cool the air on all four floors of the store from 50 surface type coolers supplied by the Grinnell Co., Providence, R. I.

All refrigerating machines are located in the basement, cold water being circulated around the building to the 50 unit air coolers, Thomas W. Caraway, manager of the Grinnell unit cooler department, explains. The system embodies automatic control.

Air Conditioning for Winter Health



To improve the qualities of air in winter, the Corozone Co. has introduced a new humidifying and ionizing cabinet.

Interesting Refrigeration Exhibits at the Dairy Show

SODA FOUNTAIN USES CONGEALING SOLUTION

DETROIT—Brine has been entirely eliminated from the new soda fountain system which Frigidaire Corp. displayed last week at the Dairy Industries Exposition here, and Frigidaire's new "congealing solution" substituted.

While the formula is not revealed, it is understood to be a eutectic solution which freezes to a mushy state, and absorbs its latent heat of fusion in thawing without ever reaching a solid state that might crack its container. It freezes at about 8° F.

The congealing solution is sealed in a narrow space on each of the two long sides of the ice cream storage compartment, direct expansion cooling coils running through the same space. When necessary the solution can be replenished by removing a small cap screw.

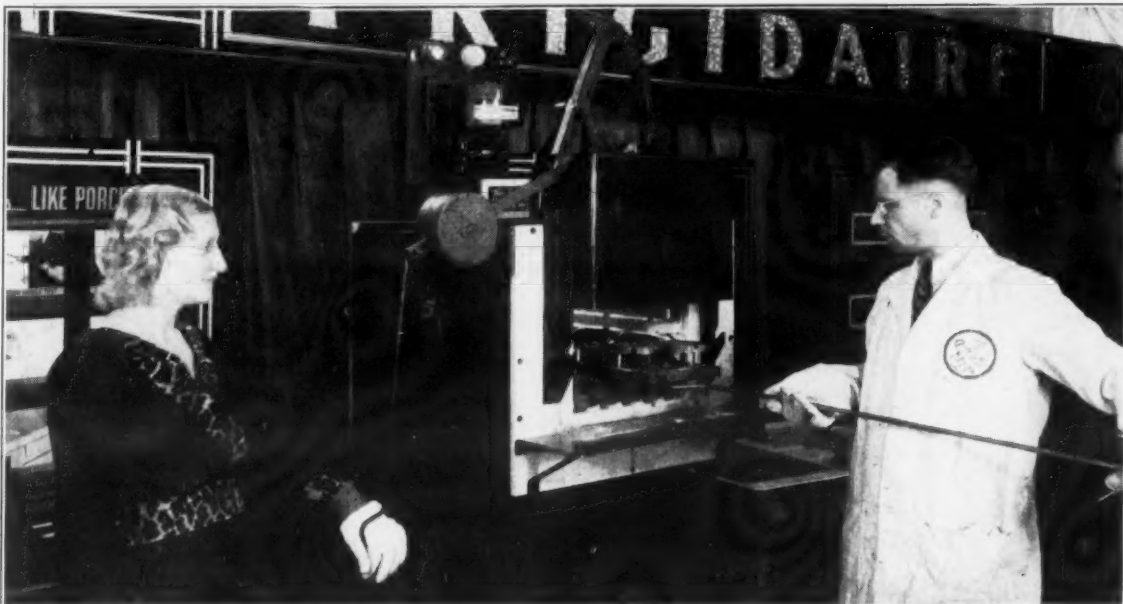
Sulphur dioxide or F-12 are used in the system. Refrigerant is first expanded into the coil which cools the syrup rail, then successively through the four ice cream storage coils to produce a zero temperature in the first, slightly higher in the second and third compartments, and about 8° F. in the last compartment. Lastly the dry storage compartment is cooled to temperatures sufficiently low for bottled goods. The system is thermostatically controlled.

Located in the dry storage chamber, and helping to refrigerate it, is Frigidaire's new double-refrigerant water cooler which cools drinking water and carbonated beverages for the fountain in two separate coils within the tank. This system has a low-pressure control.

The soda fountain system is designed to be sold direct to manufacturers and assemblers of complete soda fountains.

Another piece of equipment attracting considerable interest in the Frigidaire exhibit was a three-hole ice cream cabinet holding three different temperatures—accomplished by careful adjustment of the expansion valve.

Demonstrating the Porcelain Process



Visitors to the Frigidaire exhibit at the Dairy Show were treated to souvenir ash-trays with their names inscribed. The above oven was used to fuse the signatures.

INCO CHROME NICKEL SHOWN AT DAIRY EXPOSITION

DETROIT—Use of "Inco" chrome nickel in the dairy and refrigeration industries was shown in the exhibit of the International Nickel Co. The booth was manned by W. J. Calnan, T. H. Dauchy, F. L. LaQue, R. J. McKay, J. F. McNamara, E. A. Turner, and A. J. Wildman.

Seamless tubing, cold rolled monel for cabinet trim, and accessory parts were on display.

Solid CO-2 Applied To New Equipment

DETROIT—Applications of solid CO₂ to room coolers, household refrigerators, display cases, and ice cream cabinets were demonstrated by the International Carbonic Engineering Co. in its exhibit at the Dairy Industries Exposition here, Oct. 17 to 22.

Two display cases were shown, each offering between 1 and 1½ cu. ft. of storage capacity, and differing only in exterior finish. The cases are built to be placed on a store counter of standard height, the refrigerated products under storage being visible through the four panes of glass.

Calcium chloride driers are installed between the glass to prevent moisture condensation on it, George B. Scarlett, president of the company, stated. A service door is built in the back of the case.

Solid CO₂ Compartment

Refrigeration in the display cases is provided by a solid CO₂ container, built in the shape of a dome, which is mounted on top of the case. Insulation for the very low temperatures existing in the dome is accomplished by a glass vacuum cylinder, fitted with rubber sleeves which permit the gas to escape when its temperature has risen so high as to be of little further value for refrigeration.

Interior case temperatures and solid CO₂ consumption depends on a round slab of insulation, with a hole in the center, which is placed between the refrigerant container and the food compartment. For low temperatures, a thin slab with a large hole is used to permit greater refrigerating effect between the CO₂ and the case. For higher temperatures, thicker slabs with smaller holes are used. Under average conditions, the case uses only 3 lbs. of solid CO₂ per day, Mr. Scarlett claims.

The display case can be built to sell for from \$30 to \$40 each, Mr. Scarlett declares.

Solid CO₂ Room Cooler

Trade-named "Driceonator," a room cooler using solid CO₂ operated in another corner of the International Carbonic exhibit. The refrigerant is charged from a side door near the top of the room cooler, and sets on a metal plate which has metal fins protruding downward into the cabinet.

Air is forced between the cooling fins and out into the room through grilles in the top of the cabinet. Gas produced by the evaporating solid CO₂ can either be discharged with the cool air, or piped by rubber hose to a drain connection. The room cooler uses about 25 lbs. of solid CO₂ per day.

The use of solid CO₂ for cooling household refrigerators was demonstrated by a "Steel Queen" refrigerator, built by the Ranney Refrigerator Co., Greenville, Mich., which is contemplating official introduction of the refrigerator shortly.

From the outside, the "Steel Queen" looks like an electric refrigerator with the condensing unit in the top of the cabinet. Solid CO₂ is charged in removable cans into the cabinet through its hinged top.

Suspended from the top of the food compartment is an ice cube freezing device which gets its refrigerating effect from brine circulated from the solid CO₂ above.

Other equipment displayed were ice cream cabinets using solid CO₂, and the Carba household refrigerator (with refrigerant dome on top), described in the Sept. 21 issue of ELECTRIC REFRIGERATION NEWS.

GENERATOR BUILT FOR TRUCK REFRIGERATION

DETROIT—Producing constant voltage at variable speeds, for use as the power plant for electrically refrigerated systems for insulated truck bodies, the Upp generator had its first public showing at the Dairy Industries Exposition.

The new drive is made by the Century Electric Co. of St. Louis for the Whitaker-Upp Co. of Kansas City. It was shown in operation on a truck made by Anheuser-Busch, Inc., using a Copeland compressor.

While on the road, 115 volts d. c. are produced by this generator, operating directly from the truck engine where it is mounted under the hood. Constant voltage is maintained at variable speeds. When the truck is not on the road, an auxiliary motor is plugged into the city current.

No governor or other regulating device is used, all current control being within the generator. A 1,000-watt unit weighs less than 100 lbs. Several makers of truck chassis have designed engines which allow for the mounting.

The Upp generator consists essentially of two generators built in the same frame with independent fields, and both armatures built on the same shaft.

The regulating generator is a conventional third brush type, delivering current to the storage battery through a regulating winding in the power generator. The power generator, supplied in capacities required, has a regulating field winding opposing the main field winding. The strength of the regulating winding increases with the speed, due to increased current output of the regulating generator, thus decreasing the effective field of the power generator, and consequently holding the output voltage constant.

REFRIGERATED TRUCK FEATURED BY SERVEL

DETROIT—Two refrigerated trucks were demonstrated by Hercules Products, Inc., in its exhibit at the Dairy Industries Exposition here, Oct. 17 to 22. One was a 90-gal. ice cream truck cooled by methyl chloride as a secondary refrigerant which is condensed by solid CO₂ bunkers in the top.

The other truck was cooled by Servel refrigerating equipment, and is representative of refrigerated trucks which have been marketed by Hercules for some time.

The solid CO₂ truck held a temperature of about zero, and used 30 lbs. of solid CO₂ per 18 hours, during the week of the show, R. L. Frazier, Hercules truck demonstrator, explained.

Blocks of CO₂ are charged through the top of the truck into a vessel in the top where the CO₂ is floated in alcohol.

Coils passing through the alcohol cool methyl chloride gas down to a condensing temperature, and from there the liquid methyl chloride flows by gravity to a plate-type evaporator in the side of the truck. Gasified methyl chloride then returns to the condensing coils in the solid CO₂-cooled alcohol.

Valve in Gas Line

Control is effected by a thermostatically-operated valve in the gas line which regulates the return of methyl chloride gas to the condensing coils according to dictates of the truck temperature. The truck's refrigeration system is covered by Patent No. 1,844,677, owned by Servel, Inc.

Other equipment display included a complete line of Servel commercial machines, water coolers, and Electrolux ice cream cabinets.

Offering free ice cream cones to passersby and guests of the Electrolux exhibit were Bonnie Cole, Miss Chevrolet, and Lucille Coleman, Miss Michigan, winners in last year's beauty contests in Detroit. Between 2,000 and 3,000 cones were passed out each day during the exposition.

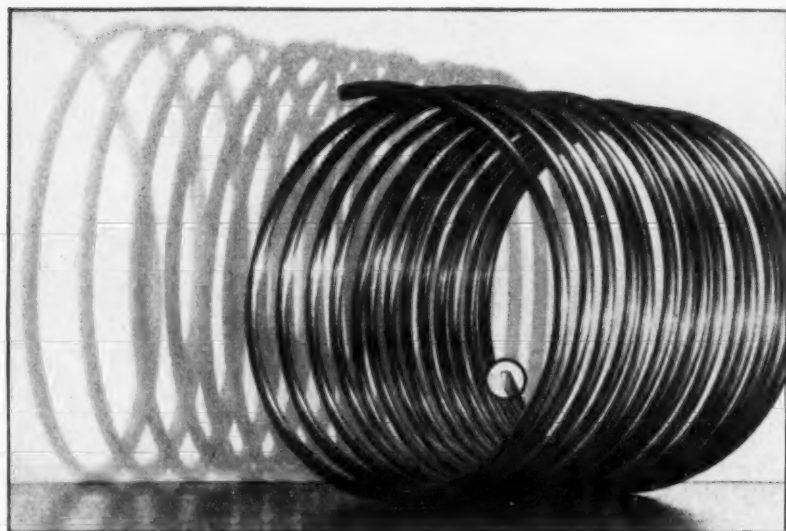
Operating in the adjoining display of Servel Sales was the new Humidraft, a forced draft cooler, which was installed in a booth housing bottled milk. An extensive exhibit of Servel machine units, and Servel hermetic water coolers were included in the exhibit.

Servel Representatives

Servel delegates to the exposition were: F. E. Sellman, vice president in charge of sales distribution; F. P. Nehrbas, vice president in charge of production; C. A. Miller, sales manager; W. D. Collins, chief engineer; J. M. Clark, commercial sales manager; C. J. Conkey, national account representative; W. J. Aulsebrook, commercial sales technician, all of Servel Sales, Inc., Evansville, Ind., and R. E. Noll, district sales representative, Indianapolis.

Electrolux was represented by George Roach, sales manager, Evansville, Ind.; L. A. Morrell and R. B. Hall, ice cream cabinet sales division, New York City; and P. M. Kroener, sales engineer, Evansville, Ind.

Representatives of Hercules Products were G. K. Specht, vice president in charge of sales; B. E. Karges, advertising manager; Ray Frazier, service engineer; O. H. Olsen, sales representative; and Harry Wessling, production manager, all of Evansville, Ind.



FRENCH TUBES to fill every standard and special need

THERE ARE French Copper Refrigeration Tubes . . . small diameter and thin wall seamless tubes . . . for every refrigeration requirement.

Stock sizes are 1/4 in., 3/8 in., 7/16 in., 1/2 in., 5/8 in., and 3/4 in., all in .035 in. gauge. Heavier gauges can be made to order. Stock coils are 25, 50 and 100 feet long. Longer lengths can be supplied at short notice.

French Deluxe Copper Refrigeration Tubes are free from oxide and foreign matter. Each coil is completely dehydrated sealed, rigidly tested and reaches you ready for use. For manufacturers who prefer to do their own dehydrating, the French Manufacturing Company produces copper tubes dried (commercially dehydrated), with either open or closed ends.

All French Copper Refrigeration Tubes possess the requisite properties for lasting, dependable service. Their grain structure is uniform. This important quality is in every coil because highest metallurgical skill, long manufacturing experience and only the best of raw material go into their production. Additional information will be furnished upon request.



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General Offices: Waterbury, Connecticut

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White
Porcelain
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DESIGNS FOR USE WITH HIGH SIDE AND LOW SIDE FLOATS — IMPROVED FAST FREEZING SHELF AT SLIGHTLY INCREASED COST.

Manufacturers: Write for Details!

MULLINS MANUFACTURING CORPORATION
REFRIGERATION DIVISION
SALEM, OHIO

ENGINEERS TO MEET IN NEW YORK, DEC. 7-9

(Concluded from Page 1, Column 1)

lents' will open at 2 o'clock. A. R. Stevenson, Jr., vice president of the A.S.R.E., will act as chairman. L. A. Philip, head of the research division, Kelvinator Corp., Detroit, will talk first on "Evolution of Refrigerants," followed by Dr. Cryder, Pennsylvania State College, with a paper on "Film Coefficients of Boiling Liquids."

Professors F. G. Hechler and E. R. Queer of Pennsylvania State College will next discuss "Absorption of Heat from Solar Radiation as Affected by Types of Surface in a Structure."

The third session will open Thursday morning at 10 o'clock. H. Harrison, chairman of the research committee, will preside at the meeting which will consider student research papers.

A. W. Oakley, vice president of A.S.R.E., will be chairman of the fourth session, Thursday afternoon, on "Refrigerating Plants." W. E. Zieher and J. C. Conley of the York Ice Machinery Corp. of York, Pa., will discuss "Cold Storage and Warehouse Refrigeration," followed by L. J. Bradford and C. C. Davenport, Pennsylvania State College, who will give a paper on "Bearing Characteristic Curves for Fluid Film Lubricated Journal Bearings."

"New Equipment in Solidification of CO₂" will be the topic of a paper by J. C. Goosmann, Dry Ice Corp. of America, New York City. "CO₂ Cycles and the Power Requirements in Production of the Solid," will be discussed by A. B. Stickney, Fred Ophuls and associates, New York City.

The stag dinner will be held at 7 o'clock Thursday evening.

Friday morning Mr. Muffy will again preside. The topic of the session will be "Commercial-Domestic Field." P. T. Sealey, Reid Ice Cream Corp., Brooklyn, will talk on the "Truck Refrigeration Problems."

"The Design and Market for Gas Refrigerators" will be the subject of a paper by H. M. Williams, Frigidaire Corp., Dayton, and "Production Layout of Cabinet-Making Plant" will be the subject of H. J. Gerlach, General Electric Co., Erie, Pa.

At 2 o'clock in the afternoon there will be an inspection tour.

ROE GIVES OBSTACLES TO STANDARD RATINGS

(Concluded from Page 1, Column 1)

F. M. Cockrell, publisher of ELECTRIC REFRIGERATION NEWS.

The history of the household mechanical refrigerator, Wilkinson said, paralleled the development of a small expansion valve that would work accurately over a limited range.

When the speaker and his father first took on the Isco line in Detroit, no refrigerator had been built to sell for less than \$700 or \$800. This was sometime during the war. The Isco machine of that time was a herringbone rotary compressor, remotely installed, as was the Delco outfit—at that time Isco's only competitor.

"Both machines used SO₂, and both had brine tanks. Delco made the first big improvement by building a cage of copper tubing around the compressor. The Isco, the Delco, and the old Cold King were alone in the field for a while, and exchanged patents back and forth for some time through a complicated system of mergers, reorganizations and expansions," he said.

Kelvinator bought out the patent rights originally held by Cold King, and developed them into the first self-contained unit. Isco, on the other hand, was the first advertiser, and spent millions of dollars on magazine and newspaper space before its failure. Before selling out the defunct company to Delco, the Isco people developed an air-cooled machine, he reported.

Early automatic switches, Wilkinson recalled, had to be wound every seven days, and were made from Minneapolis-Honeywell furnace switches, re-built to work in refrigerator temperatures.

After 1926, Wilkinson said, direct expansion copper coils, fins that are part of the copper coiling, and really accurate small expansion valves were developed.

H. Herter said that the Delaware Refrigerating Co. made a half-ton machine as early as 1896, and that it was one of the most practical machines in early years. In 1920, he said, McClellan built a one-ton machine, that was identical in every respect except scale with his 100-ton outfit.

As late as 1916, one of the members recalled, it was generally believed that no expansion valve could be built for less than a one-ton refrigerator.

H. Roller recalled early efforts to sell refrigerators. Butchers were the first customers, he said; they appreciated the independence from high natural ice prices and possible scarcity during the summer months.

The early McClellan machine, Roller said, was popular with the butcher customers because it could be turned on and off with one water valve. Then the absolute contactor was invented, and this one valve became automatic.

Roe opened his paper by saying that in 1928 he had been asked to be chair-

Puffer-Hubbard Offers Ventilated Cabinets

(Concluded from Page 1, Column 1)

the bottom of the liner. Here the liner is penetrated, and an oblong opening permits ingress into the food compartment," he states.

On the opposite side, away from the evaporator, is an opening of similar size in the top of the liner. From this, a flue, or passage, follows the top of the liner and continues down along the outside surface of the liner to a point at a level with the bottom of the liner.

Here it angles off, penetrates the insulation and extends to the outer side of the box where an opening is provided for egress of the laden air.

When the refrigerator is in operation and temperature has been established within the food compartment, air at room temperature enters the opening or ingress port at the upper side of the case, and is cooled by its contact with the liner, causing it to fall. Its course is down through the flue and into the food chamber.

The slightly warmer air in the upper region of the food chamber is compressed by this inrush of air, and its exhaust is provided by the egress opening at the top. This compressed air then travels the exhaust flue to a point where the flue drops down along side of the liner to its lower opening.

This air, being of a still lower temperature, falls through the egress flue, a minus pressure occurring between the upper and lower ends of the flue to further aid circulation, Mr. Phillips explains.

It is not intended that all air admitted or circulated should be exhausted in its first cycle of circulation, so a second opening in the top of the liner connects with a flue or passage that again carries the air to the bottom of the food chamber, he shows.

Food odors, gases such as given off by food loads, being lighter than the circulated air are carried to the top and off through the egress duct, and fresh air inhaled in their stead, he claims.

"Control of relative humidities within the food chamber is a matter of controlling the area of cold surface to which the incoming air is exposed. That is, a larger volume of incoming air with a smaller area of cold surface can produce a veritable rain storm within the food chamber. Determination of the proportions have developed a corrective relationship between the cold surface and the amount of circulated air to arrive at a suitable condition," he says.

"Operation of the system does not materially increase the running time, the current consumption of the unit, or the frequency of defrosting," he concludes.

man of a committee to standardize electric and ice refrigerators for household use.

The impetus behind this movement, he said, came largely from consumers, and he immediately found that this effort for standardization differed from most of the other American standards in that it dealt with a product that would go to ultimate consumer directly, without the buying advice of an engineer.

From his experience with the standards for ice refrigerators already issued, Roe predicted that manufacturers would mark their Grade A boxes, but refuse to label the lower grades.

The ice box makers, he said, justify their refusal to mark the performance of the box on the name plate by saying that the electric refrigerator has so far replaced them that their buyers are interested only in price.

However, he has talked to electric refrigerator manufacturers, and they do not want to mark power consumption and temperature on their units because the public will misunderstand the code.

At this point one of the members interrupted to point out that if a refrigerator were marked with kilowattage and temperature, it would perform well for the buyer who used the box in a cool room, and hardly ever opened the door, but not for the woman who found that with an electric fan she could make a fine air-conditioning unit out of her ice box.

This woman, the engineer said, would come rushing back to the manufacturer, and claim that her refrigerator was using up more current than the name plate said it should.

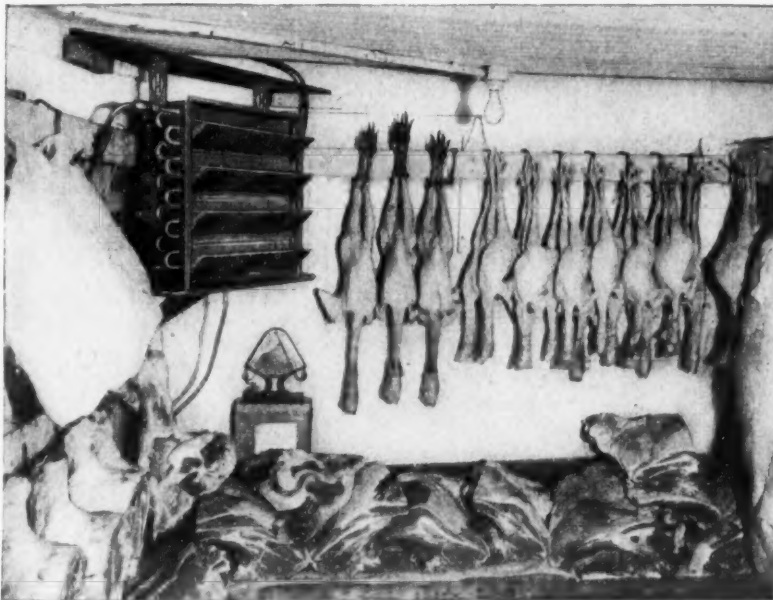
If the manufacturers all graded their boxes the same way, Roe answered this argument, they could point out that gradings were for comparison only, and were made on a basis of laboratory performance. This is not dissimilar to the horsepower rating of automobiles, he said.

At the conclusion of Mr. Roe's talk, David L. Fiske, national secretary of the A.S.R.E. rose to say that while the society had been behind the move to standardize household refrigerators, they did not feel that the engineer's duty went any further than laying before the public a means of testing boxes.

MERCHANTS REFRIGERATING CO. PLANS EXPANSION

NEW YORK CITY—Merchants Refrigerating Co. which serves refrigeration to a number of large New York buildings in the downtown section from centrally located refrigerating plants, is planning to add a new refrigerating unit to its present chain.

Forced Air Cooling of Meats



Typical Humidi-Cooler installation in a market refrigerator.

Humidi-Coolers Installed In Eastern Markets

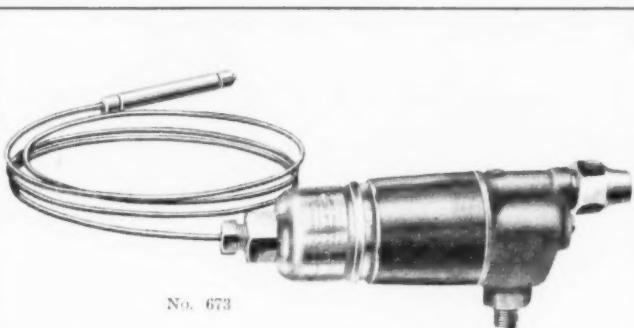
WEST HAVEN, Conn.—Sawyer Engineering Co.'s forced circulation "Humidi-Cooler" is finding increasing applications in the cooling of food products, Merwin A. Pond of the Sawyer organization states.

Three models comprise the line, with respective capacities of 250, 750, and 1,200 lbs. of ice melting rating.

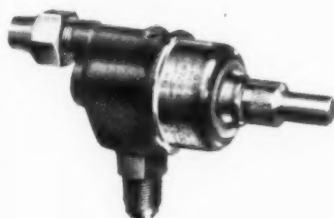
Chief feature of the cooler is its maintenance of high humidities, Mr. Pond says, as a relative humidity as high as

90 per cent can be held if necessary.

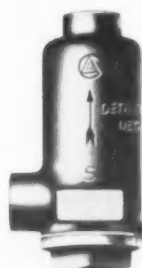
Humidi-Cooler distributors which have made recent installations are: Kelvinator of Ansonia, Ansonia, Conn., which placed two in local meat markets; Meachem-Fenn, Inc., Syracuse, which installed one in an A & P store to cool an 8x8x10-ft. walk-in refrigerator with an RB-140 Kelvinator condensing unit; and Appliance Engineering Co., Boston, which has placed several in Boston stores.



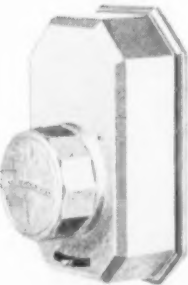
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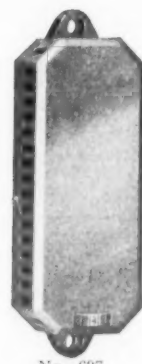
No. 672



CRC-145



No. 855



No. 697



No. 683

"GENUINE DETROIT" AIR CONDITIONING CONTROLS AND VALVES

For every control requirement in air conditioning there is a "Genuine Detroit" product. Only a few of these products are shown here. Whatever your particular problem may be, our engineers with years of experience in solving control problems will be glad to help you. Just call upon us.

The No. 673 "Genuine Detroit" thermostatic expansion valve insures maximum efficiency for cooling and dehumidification from air conditioning evaporators. It keeps the coil completely refrigerated at all times as it automatically changes the back pressure in accordance with load requirements. Can be used on either single or multiple installations.

The No. 672 "Genuine Detroit" automatic expansion valve is accepted as standard throughout the industry.

No. 683 Solenoid Valve is used with the Humidistat to control the flow of water for humidification, while a similar valve operated by a thermostat will control the flow of refrigerant (including F-12) in multiple cooling units. CRC-145 Strainer should be used with all control valves on water supply.

No. 855 Mercoid Thermostat offers in a single high-voltage instrument accurate control for both summer cooling and winter heating. No. 444 Thermostat for low voltage also is available. No. 697 Humidistat will control humidification in winter and dehumidification in summer.

DETROIT LUBRICATOR COMPANY

Trumbull, Lincoln, Marquette & Viaduct

DETROIT, Mich., U. S. A.

Lubricators - Carburetors - Valves

Automatic Controls for temperature, pressure, humidity, Refrigeration, Oil Burner and Heating Accessories

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

A Page for the Air-Conditioning Engineer

Utility Engineer Reports on Extent of Air Conditioning in Detroit

(Concluded from Page 1, Column 5)
power consumption for 100 days of operation during the summer.

Port Huron Office

The Port Huron (Mich.) office of the company was considered next. Here 100,000 cu. ft. of space was cooled by ice water pumped through fin-type coils in air ducts, the maximum cooling load being 17.9 tons of refrigeration with 8.5 kw. of lighting load.

This installation used 80 tons of ice in July and 89 tons in August, operating eight hours per day. The ice tank measures 17x5x6.25 ft. The system cost \$5,700 to install.

On the same basis of cost estimation, Mr. McLay showed that fan and pump motors consume 30 kw. per day, and that the power consumption for ice manufacture and motor load was 15,000 kw. per season.

The system in the Birmingham office is still under construction, so Mr. McLay simply explained that it will use the same type of ice cooling system as the first two mentioned, with a 16x4x7-ft. ice tank, and estimated its ice consumption at 126 tons.

Detroit Edison's office in the General Motors Bldg. was cooled last summer by eight Frigidaire air conditioners, served by three 3-hp. condensing units. The system cost \$4,000. The highest one-hour peak demand was 7 kw., he reported. Power consumption was as follows:

| Period | Consumption, kw. |
|-------------------------------|------------------|
| May 10 to July 15..... | 1,360 |
| July 15 to Aug. 16..... | 1,240 |
| Aug. 16 to Sept. 1..... | 760 |
| Sept. 1 to Sept. 16..... | 160 |
| Total May 10 to Sept. 16..... | 3,520 |

The Ann Arbor office of the company was conditioned by a 17-ton CO₂ compressor driven by a 25-hp. motor, to cool a 17x3½x5-ft. water tank holding 17,000 lbs. of water. The system cools a space of 45,000 cu. ft. A thermostat in the water tank starts and stops the compressor to keep the water temperature between 35° and 40° F., Mr. McLay explained. The system cost \$10,800 to install, and consumes 106 kw. per day, including the compressor, pump, agitator, and fan.

Residence Cooling With Ice

Residence cooling was studied last summer through an ice installation in a Birmingham home, he stated. A space of 17,000 cu. ft. was cooled by ice water pumped through cooling surface installed in the duct of a forced circulation warm air heating system. The ice tank consisted of a 500-gal. fuel oil tank, buried outside the house, and holding one ton of ice. The maximum cooling load was four tons of refrigeration. The system cost \$800, he reported.

"Cold city water was used in the cooling surface during June. During June the system was used seven days, and the equivalent ice consumption would

have been two tons. In July and August, seven tons of ice were used making a total of nine tons for June, July and August. The system was used 15 days during July and August.

"The maximum amount of ice used during one day was 2,500 lbs. On this day the indoor temperature was purposely held at 76° F. for 24 hours while the outdoor temperature went to 95° F. This test showed the possibilities of the cooling system but does not represent ordinary operating conditions.

"In regular operation the indoor temperature would not be held so low on a hot day and the ice consumption would therefore be less," Mr. McLay pointed out.

A Carrier steam ejector for air conditioning Snyder's Coffee Shop, on Woodward Ave. in Detroit, has been observed since its installation about July 1, he reported. The system operates from Detroit Edison's central steam mains at a pressure of 30 lbs., and provides a new use for steam in the summer.

This system develops 14.1 tons of refrigeration to cool 30,000 cu. ft. of space. During August it consumed 172,000 lbs. of steam. The unit occupies a space 9x2x6 ft.

On Aug. 31, 1932, when the maximum outdoor temperature rose to 93° F., the plant kept the restaurant to a maximum indoor temperature of 81° F., running continuously from 6:15 a. m. to 9:30 p. m.

During this test it consumed 6,945 lbs. of steam which cost \$2.96 at the demand rate of 42½ cents per M lbs. net. In this same period, the system used 4,930 cu. ft. of condensing water, costing \$1.97 at a water rate of 40 cents per M cu. ft., while the water pump consumed 24.7 kw., costing \$.56 at the 2½ cents per kw. rate. Thus, the total operating cost for the day was \$5.49, Mr. McLay reported.

Residence Cooling With Fans

"Comfort cooling in the home with electricity or ice is still a luxury because of its cost, and it is probable that until the cost is considerably lowered, comfort cooling equipment will in general be installed only in homes of the well-to-do," Mr. McLay predicted.

"There are, however, thousands of home owners who can afford to pay a moderate amount for relief from the heat in summer. In most homes, indoor temperature does not become serious until late afternoon and it is at dinner time and in the evening that cooling is needed most.

"In general on hot days in Detroit the temperature begins to drop before sun down and there is a considerable drop during the evenings. If, then, outdoor air can be introduced into the house in sufficient volume during the evening, a very appreciable degree of comfort can be obtained," he declared.

With this in mind, Detroit Edison made two installations of fans in homes

this summer. In one home a multi-blade fan driven by a ½-hp. motor was installed in the attic. Openings covered by grilles were made in the ceilings of the second-floor bedrooms and these openings connected by ducts to the fan. Air is discharged out-of-doors through openings in the attic, he explained.

"The house can be cooled by opening windows and operating the fan whenever the outdoor temperature is lower than the indoor temperature. The degree of cooling in different rooms can be regulated by the manipulation of windows, for example the first floor can be cooled by opening first floor windows and closing the bedroom windows.

On one occasion the second-floor temperature was lowered 10° in three hours. In addition to a lowering of temperature, comfort is obtained by the movement of air. The cost of the installation was \$260, Mr. McLay explained.

In another home a propeller-type fan, driven by a 1/6-hp. motor, was installed at the top of the attic stairs. It was arranged so that air pulled up from the first and second floors was discharged into the attic and thence out-of-doors through openings in the attic. Cooling in various rooms is regulated by the manipulation of windows. When cooling the bedrooms it is of course necessary that bedroom doors be kept open. This installation has also worked out quite well, he said. Its cost was \$152.75.

New Installations in Detroit Edison Territory in 1932

"To date in 1932 we have a record of 42 comfort-cooling installations made in our territory," Mr. McLay reported. "The total capacity of these installations is approximately 480 tons of refrigeration. Portable ice cabinets are not included. These installations are classified in three different ways as follows:

Classification by type of customer

- 11 Restaurants and dining rooms.
- 11 Residences; four of these are completely or almost completely cooled.
- 10 Stores; five of these are Detroit Edison commercial offices.
- 7 Private office installations; in most cases at least two offices are cooled.
- 1 Theater.
- 1 Research laboratory.
- 1 Funeral parlor.
- 42 Total.

Classification by type of equipment

- 24 Installations using one or more compressors of 3 hp. and less.
- 6 Installations using compressors of over 3 hp.
- 11 Ice installations.
- 1 Steam ejector system.

Further classification by type of equipment

- 24 Duct systems.
- 18 Room cabinet installations.

Installations Made in Other Years

"While the total tonnage installed in 1932 was not large, it is probably all that could be expected in a depression year. It must also be remembered that there were many large air-conditioning installations in Detroit prior to 1932.

"The three leading department stores all have air-conditioning systems. Of these the 2,000-ton installation in the J. L. Hudson Store is the largest. A 600-ton installation cools the lower 16 floors of the Union-Guardian Bldg. There are 1,675 tons installed in eight Public theaters. These installations range in size from 100 tons to 360 tons. In addition to these there is a considerable amount of air conditioning in restaurants, hotels, and banks," he reported in conclusion.

CHICAGO RESTAURANTS FIND AIR COOLING IS PROFITABLE

CHICAGO—There are now more than 20 restaurants in Chicago equipped with air-conditioning apparatus, and these are proving profitable to their owners, according to K. C. Porter of the lighting and appliance sales department of the Edison Co. here, who has received numerous letters from restaurant owners who installed air conditioners during the past summer months.

D. L. Toffenetti, proprietor of the Triangle chain of restaurants, in a letter to Mr. Porter states that there has been a large increase in patronage as a result of the air conditioning installation at his new Randolph street establishment.

"Instead of sustaining the usual summer loss, our business has increased 15 per cent, which means a real increase of 25 per cent," he writes. "During the hot summer months our patronage has steadily increased, and people have been willing to stand around the wall and wait patiently for seats, while many restaurants in the neighborhood are empty.

"Another thing which we notice is that customers are ordering heavier dishes than they would without the aid of this powerful factor, says Toffenetti.

In the same vein is a letter from John P. Harding, whose restaurant on S. Wabash Ave., has an electric air-cooling system. "We have had a noticeable increase in patronage," he writes. "Clean, refreshing air is a real stimulant to lagging summer appetites."

Friez Humidistat Uses Human Hair For Hygroscopic Element

BALTIMORE—Julien P. Friez & Sons, Inc., a division of Bendix Aviation Corp., has just announced a new three-wire humidistat which uses human hair as the hygroscopic element.

The instrument is designed for operation with humidity-tempering apparatus such as water sprays for adding moisture to the air, or with dehumidifying equipment which extracts moisture from the air. Encased in a 6½x2-1/16x1½-in. metal case, the instrument

ated from 20 to 100 per cent relative humidity.

If close regulation of 1 per cent is unnecessary, the electrical contacts can be adjusted to give a wider range of humidity control with less wear of starting and stopping on the controlled equipment.

The contacts are designed to make and break 110 volts, and up to 25 watts. Wiring connections are made from the outside of the cover, a moulded bakelite terminal block being provided with an arrangement for inserting the electrical leads from the bottom or back of the case.

The humidistat should be installed in a position which is representative of air conditions in the room, Friez engineers explain. It should be well in the circulation space of room atmosphere, preferably half way between the floor and the ceiling, and free from excessive vibration.

The cover of the instrument is sealed from the back, and should not be removed except at the Friez factory, the announcement states.

The hair element consists of 54 selected strands of human hair, each individually mounted and ventilated. The elements are effective up to the saturation point, and are not damaged by temperatures below 175° F., the manufacturer claims. They can be cleaned of dust or oil deposits, and can be revitalized by wrapping the entire humidistat in a wet towel from which free water has been wrung, left wrapped for 30 minutes, and dried.

The instrument lists at \$15. The company also offers wiring diagrams for special applications, and can furnish relays, solenoids, etc. for auxiliary equipment.

Proctor & Schwartz, Philadelphia manufacturer of drying machinery, has standardized on the Friez humidistat for its humidification equipment.

For air-conditioning installations where it is desirable to insert the sensitive elements into the ducts, pipes, cabinets, ovens, etc., special models of the humidistat are built with the same hygroscopic element.

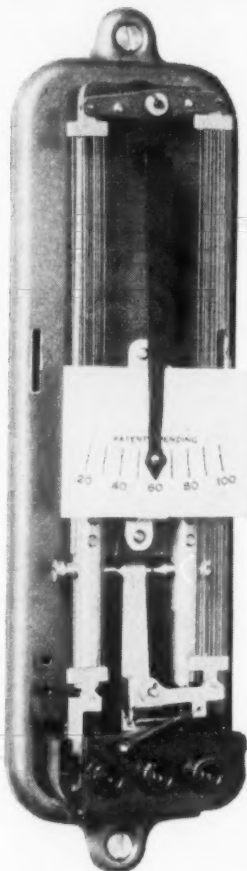
REVERSED CYCLE FOR HEATING EXTENDED IN LOS ANGELES

(Concluded from Page 1, Column 4)
passed through an air washer on the roof where it absorbs heat from the outside air.

"This principle can be utilized where a source of heat is available such as a body of water or atmosphere which is not at too low a temperature. The cycle does not lend itself to the efficient production of high temperatures," he said.

It was expected that Los Angeles would prove a favorable climate for testing the cycle because of its mild winters.

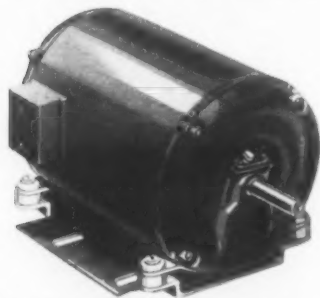
New Humidistat



With case removed, hygroscopic element suspended vertically.

can be mounted on the wall of a room. A visible dial indicating percentages of relative humidity is accompanied by a pointer which can be set manually to control humidity-regulating equipment so that the relative humidity is maintained to 1 per cent of the desired point, the designers claim. The scale is gradu-

8 big features



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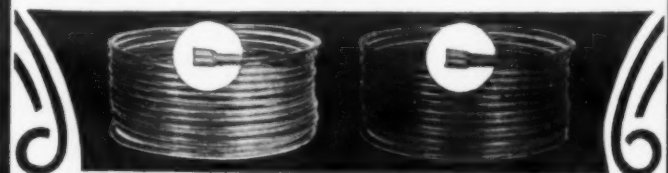
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AIR-COOLING ENGINEER WITH WESTINGHOUSE

EAST PITTSBURGH, Pa.—W. C. Goodwin, who has recently been appointed division engineer of the air-conditioning equipment division, supply engineering department of the Westinghouse Electric & Mfg. Co., is a native of Pittsburgh and has been employed in the Westinghouse organization since his graduation from Penn State College in 1915.

While in college he was elected to the honorary societies, Phi Kappa Phi and Eta Kappa Nu. Upon graduation he enrolled in the Westinghouse graduate student course, attending the engineering and design schools.

He then entered the control engineering department being engaged in the development section until 1926.

During the next two years he was in Europe as the company's liaison engineer. In 1928, he was appointed manager of renewal parts, engineering department, which position he held until his recent appointment in the air-conditioning equipment division.

ACME WELDED PIPE CO. BUILDS AIR-COOLING COILS

JACKSON, Mich.—Two types of finned evaporator coils are being manufactured by the Acme Welded Pipe & Coil Co. for both refrigeration and air-conditioning applications. For ammonia, the company makes an all-steel coil, hot dipped galvanized. For other refrigerants such as methyl chloride, sulphur dioxide, F-12, etc., a coil is built of tinned copper tubing with aluminum fins.

LARGE AFRICAN BUILDING EQUIPPED BY MAJESTIC

JOHANNESBURG, South Africa—"Gainsborough Mansions," a four-story building of stone, comprised of 44 apartments of two, three, and four rooms, has been equipped with Majestic hermetic refrigerators by Mackay Brothers, Ltd., Grigsby-Grunow Co. distributor here, according to Harry Scheel, export manager.

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LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other materials recently issued. Manufacturers are requested to send copies of new trade literature to Electric Refrigeration News.

Revere Products

Revere's semi-annual catalog has been issued under the date of July 1. It is a completely bound book, with the whole story regarding any one form of Revere Copper & Brass, Inc., product being placed on two facing pages. The page size has been increased to letter measurement, for easier filing and reading. Photographs, tables of weights, prices and specifications are included.

Virginia Smelting Esotico

Virginia Smelting Co. has issued an 8-page folder on its "Extra Dry" Esotico refrigerant. The front cover shows the standard cylinders in which the product is shipped, and the back cover lists the 27 places at which stocks are carried. In the folder are: a brief outline of the manufacture of the product, hints for handling the container, means of transferring the SO₂ to smaller containers, a simple method of testing. One page is devoted to a table giving standard ton data.

Wagner Motors

Multi-speed squirrel-cage motors are the subject of a six-page bulletin released by Wagner Electric Corp., St. Louis. The pages are illustrated with installation photographs, and a full description of each installation is given. The copy covers constant-torque, constant-horsepower and variable-torque motors, further classified as two-speed, three-speed and four-speed.

Liberty Refrigerators

A folder designed for use in signing dealer outlets has been released by Liberty Refrigeration Corp., 237 Georgia Ave., Providence, R. I. The folder emphasizes the compressor used in the refrigerator, and gives specifications on that unit.

Wagner Air-Cooled Transformers

A new loose-leaf bulletin sheet describes Wagner Electric Corp.'s types AC and AA air-cooled transformers in sizes 1 to 50 Kv-a, voltages 100 to 600. Application of these products is also discussed.

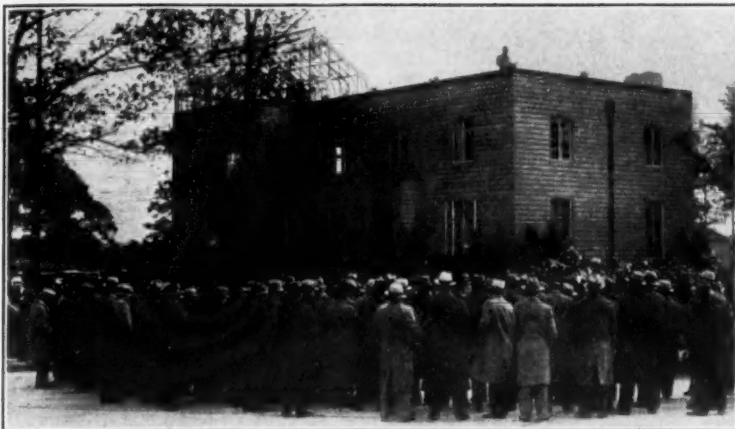
Gilmer V-Belts

Containing full information on the features and uses of Gilmer V-belts, a 63-page booklet has been received from the L. H. Gilmer Co., Tacoma, Philadelphia. The first section of the booklet is devoted to general discussions and pictures of the various belts made by the company, while a second section offers tables of complete engineering data concerning the belts.

Matheson Refrigeration Gases

The Matheson Co., East Rutherford, N. J., has just issued a small folder listing manufacturers of electric refrigerators, trade names of the units and the type of refrigeration gases used in these machines. At the end of these listings is a chart giving prices on all refrigerants sold by the Matheson Co.

Porcelain Enameled Home



Many visitors were attracted to the opening of Ferro Enamel's new model home. The use of porcelain is featured for siding and shingles outside, as well as for many interior appointments.

FERRO ENAMEL OPENS 'HOUSE OF PORCELAIN'

CLEVELAND—More than 25,000 persons have visited the porcelain enameled residence built by the Ferro Enamel Corp. of this city, which was opened to the public Oct. 9.

This house has a steel frame and a porcelain enamel exterior. It was erected as an experiment in producing low-cost, mass-production houses, and to demonstrate porcelain enamel as an architectural medium.

The frame is of 4-in. channels, and is somewhat similar to the ordinary wood frame. Siding is "Ferro-Clad"—fibre insulating-board sandwiched between two steel sheets—covered on the outside with Ferro porcelain enameled shingles.

Made of 20-gauge steel, the shingles are vulcanized to roofing felt, and nailed to the Ferro-Clad in strips of six, to produce a weatherproof job.

Many novel uses for porcelain enamel have been found in the interior of the Ferro house. This finish is found on all lighting fixtures, electric switch plates, base-boards in the bed rooms, and cast iron tile for the vestibule floor, the combination sink and dish washer.

In addition, "Veos" porcelain enamel wall tile, manufactured in the plant of the Youngstown Pressed Steel Co., Warren, Ohio, has been used in the kitchen, lavatory, and bath room.

The frame, windows, and sheathing were fabricated in the Truscon factory. Erection of the house was begun July 8. It required about five working days to complete the frame and apply the shingles. The shingles, which were made in the plant of the Vitreous Enameling Co., Cleveland, were applied to the walls and roof of the house and garage in five days.

The total time for erection was less than half that ordinarily required for similar type construction made in conventional materials.

Kelvinator Installed To Test Concrete Samples

BATON ROUGE, La.—To test samples of road materials to be used on Louisiana's concrete, Kelvinator refrigeration equipment has been installed in the Physical Testing Laboratory of the Louisiana Highway Commission by the Standard Motor Car Co., Kelvinator distributors.

A temperature of 70° F. is regarded as the optimum testing point for concrete samples, so tests are run at that temperature for a period of 28 days, first in dry moist storage and then submerged in water.

The purpose of the refrigeration equipment is to hold both dry-moist storage and water baths at the 70° F. temperature with no variations greater than 5° F. D. L. Calmes, manager of the distributor's refrigeration department, explains.

Two Kelvinator WR-40 condensing units are installed, one for the dry-moist storage test, the other for the submersion test, the condensing units being inter-connected so that they can be used individually or collectively to provide the necessary refrigeration.

The storage test is made in an insulated room, 11x13x17 ft., with five gallons per hour of moisture spray. The submersion test is made in six 100-gallon open water vats. The water bath is cooled by Temprite model 90 cooling units.

"In series with the Temprites furnishing 70° F. water is a thermostatically controlled water heater to raise the water temperature should outside temperatures get too low," Mr. Calmes states.

Three Temprite drinking fountains are also installed in the building, refrigerated by a model AK Kelvinator machine.

CINCINNATI DOCTORS FIND SO-2 ALMOST HARMLESS

CINCINNATI—The effect of sulphur dioxide on refrigeration workers has been given special study by Drs. Robert A. Kehoe, Willard F. Machle, Karl Kitzmiller, and T. J. LeBlanc of the University of Cincinnati.

After a study of 100 men who had worked in the fumes for varying periods, some as long as 12 years, these scientists concluded that frequent and more or less continuous exposure to endurable amounts of the fumes causes no permanent damage to the system, and that the effects of exposure to unendurable concentration, when workers can escape quickly, are negligible.



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SUPER GALVANNEALED is similar in all essentials to SUPER METAL. The base sheet is of special analysis open hearth steel. It is zinc coated by the same heat treatment process.

Both sheets are unexcelled for construction of Kitchen Equipment, Refrigerators, Ice Cream Cabinets and diversified products requiring a fine finish, uniformity, a high degree of rust-resistance, workability, long life and other qualities that are desirable in fine cabinet construction.

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● Offers an ideal surface (a bond) to which paint, lacquer and enamel finishes can be applied, without special treatment, and it will retain these finishes under severe conditions of use.

● Through the widespread adoption of this special coated sheet metal cabinet manufacturers are offering the highest efficiency obtainable.



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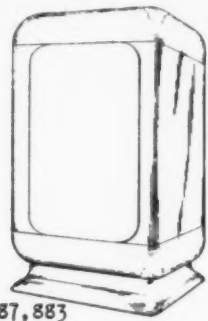
REVIEW OF LATEST PATENTS GRANTED

ISSUED OCTOBER 4, 1932

(Continued from Last Issue)

DESIGNS

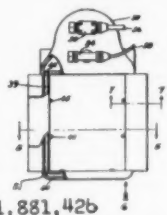
87,883. REFRIGERATOR CASING. John K. Olsen, Chicago, Ill., assignor to Stewart-Warner Corp., Chicago, Ill., a Corporation of Virginia. Filed Aug. 10, 1932. Serial No. 44,570. Term of patent 7 years.



87,883

ISSUED OCTOBER 11, 1932

1,881,426. REFRIGERATING APPARATUS. John Ralph Fehr, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corp., a Corporation of Delaware. Filed Aug. 31, 1927. Serial No. 216,750. 7 Claims. (Cl. 62-95.)



1,881,426

6. Refrigerating apparatus comprising, in combination, a refrigerant supply device; refrigerant ducts communicating with said supply device, each duct comprising a recessed wall portion and a cover plate for said recesses hermetically sealed to the wall portion; separate means for hermetically sealing the open ends of the ducts from the atmosphere and an individual fin extending from the wall portion parallel to and adjacent each recess.

1,881,473. CONCEALED PIN HINGE. Carl Geake and Andrew Ekman, Grand Rapids, Mich., assignors to Winters & Crampton Mfg. Co., Grandville, Mich., a Corporation of Michigan. Filed July 21, 1930. Serial No. 469,602. 4 Claims. (Cl. 16-128.)

1. In a hinge, a hinge plate having spaced apart ears, each ear having a hinge receiving opening, a second hinge plate having an extension between said ears, two hinge pins mounted for longitudinal movement in said extension and extendible into the openings of the respective ears and a flexible tongue forming a part of the said extension structure bendable into a position between the inner ends of said hinge pins to retain them in extended position.

1,881,541. REFRIGERATING GOODS-DISPLAY DEVICE. Thomas G. Harrison, Minneapolis, Minn., assignor to Winston and Newell Co., Minneapolis, Minn., a Corporation of Delaware. Filed Aug. 21, 1929. Serial No. 387,531. 9 Claims. (Cl. 62-89.5.)

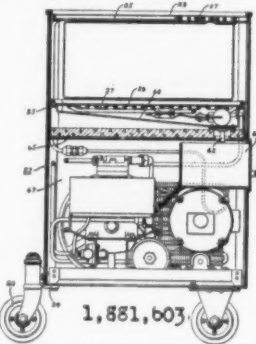
1. A device of the class described having a goods-display chamber, having transparent sides and having a floor, different portions of which are at different levels, a refriger-

ating unit supported by that floor portion which is at the lowest level, said unit being of substantially less area than the floor portion on which it rests, and a goods-display support arranged above the unit and at a higher level than any of the floor portions.

1,881,568. REFRIGERATING APPARATUS. Charles F. Henney, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Jan. 31, 1930. Serial No. 424,933. 3 Claims. (Cl. 62-118.)

1. In refrigerating apparatus a generator-absorber comprising a container, a plurality of spaced apart discs within said container, each of the discs having a portion cut out of the body of the disc to form openings, said portion being bent to form a spacer section for the next succeeding disc, a plurality of bleeder tubes passing through said openings, a header at one end of said container communicating with all of said bleeder tubes, and a connection to said header adapted to be connected to a condenser.

1,881,603. REFRIGERATING APPARATUS. Harry B. Hull, Dayton, Ohio, assignor to Frigidaire Corporation, Dayton, Ohio, a Corporation of Delaware. Filed Dec. 30, 1930. Serial No. 505,578. 4 Claims. (Cl. 62-116.)



1,881,603

2. A refrigerating apparatus comprising in combination a serving cabinet, a heating element in said cabinet adapted for applying heat to food articles, a cooling element within said cabinet adapted for cooling food articles, and a closed refrigerating system arranged for utilizing the heat of compression therein for supplying heat to said heating element and being arranged for supplying refrigeration to said cooling element.

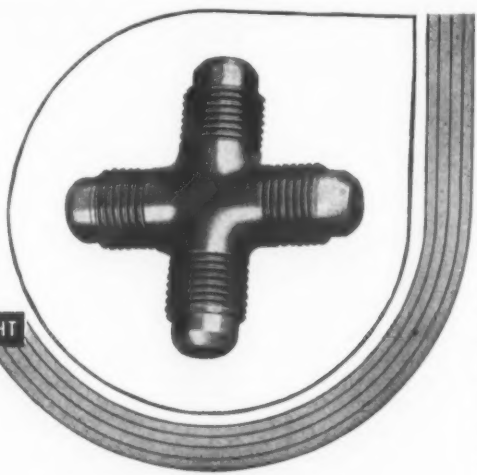
1,881,610. TUBING. Rollin M. Hyde, Detroit, Mich., assignor to McCord Radiator & Mfg. Co., Detroit, Mich., a Corporation of Maine. Filed July 11, 1930. Serial No. 467,323. 4 Claims. (Cl. 257-262.)

1. A tube of the character described having an outer wall, said outer wall having portions at a number of places about the axis of the tube extended inward to provide internal fins for the tube, and external fins applied to the outer wall and extending around about the same.

1,881,725. COOLING SYSTEM FOR BEVERAGE DISPENSING APPARATUS. William E. Leibing, Sausalito, Calif., assignor to Lyon-Magnus, Inc., San Francisco, Calif., a Corporation of Delaware. Filed Feb. 19, 1930. Serial No. 429,686. 15 Claims. (Cl. 62-141.)

1. In a liquid dispensing apparatus, a cooling bath, means conducting liquid to be dispensed, and means operable in response to flow of liquid through said first named means for agitating said bath.

1,881,817. FREEZING MOLD. Edwin R. Meyer, St. Louis, Mo., assignor to Meyer-Blanke Co., St. Louis, Mo., a Corporation of Missouri. Filed Aug. 14, 1931. Serial No. 557,029. 2 Claims. (Cl. 107-19.)



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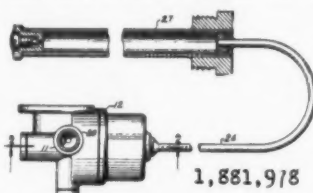
COMMONWEALTH BRASS CORPORATION
COMMONWEALTH AT G. T. R. R.
DETROIT - MICHIGAN

1. A freezing mold construction comprising a plurality of pairs of mold compartments, removable rubber panels engaging adjacent faces of the parts of compartments, the surfaces of said panels in contact with the frozen article having a design therein and a rubber mounting strip to which all of said panels are secured.

1,881,943. JOINT. Harold K. Rader, Port Huron, Mich., assignor to Mueller Brass Co., Port Huron, Mich., a Corporation of Michigan. Filed May 14, 1930. Serial No. 452,451. 3 Claims. (Cl. 285-115.)

1. A joint comprising a receiving portion, an element adapted to be introduced therein from the outside, a sleeve positioned between said receiving portion and said elements tapering inwardly from the outside of the joint, openings on said sleeve inwardly of the joint and a flange on said sleeve spaced from the end of said receiving portion.

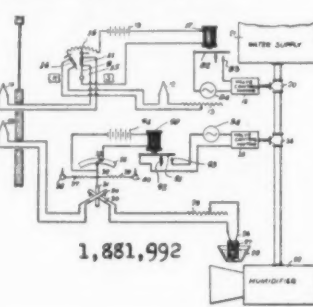
1,881,978. TEMPERATURE CONTROL APPARATUS. John Gudbrand Tandberg, Stockholm, Sweden, assignor, by mesne assignments, to Electrolux Servel Corp., New York, N. Y., a Corporation of Delaware. Filed Feb. 17, 1931. Serial No. 516,303, and in Germany Aug. 20, 1930. 7 Claims. (Cl. 297-3.)



1,881,978

7. A fusing type thermostat containing water as the working substance and a radioactive material located in the water.

1,881,992. AIR CONDITIONING CONTROL. Samuel M. Anderson, Sharon, Mass., and Robert T. Palmer, New York, N. Y., assignors to B. F. Sturtevant Co., Boston, Mass. Filed May 9, 1931. Serial No. 536,144. 12 Claims. (Cl. 236-44.)



1,881,992

2. Humidity control apparatus comprising means for supplying moisture to the air of a heated room, an observation surface within said room having a portion exposed to outdoor temperature, means responsive to the dry bulb temperature of the air within said room and to the temperature of said observation surface, for decreasing the supply of moisture to the room, when for a given temperature of said observation surface, the dry bulb temperature falls below a predetermined level.

1,882,011. REFRIGERATOR CONSTRUCTION. Paul R. Heygel, Ridgefield, N. J. Filed May 22, 1930. Serial No. 454,560. 7 Claims. (Cl. 62-51.)

1,882,026. FLUID HEAT TRANSFER SYSTEM. Carl Georg Munters, Stockholm, Sweden, assignor, by mesne assignments, to Electrolux Servel Corp., New York, N. Y., a Corporation of Delaware. Filed Feb. 4, 1932. Serial No. 590,946, and in Germany June 20, 1931. 15 Claims. (Cl. 62-119.5.)

12. In a fluid heat transfer system, a heated portion, a cooled portion below said heated portion, means utilizing vapor formed in said heated portion to circulate liquid through said cooled portion by gravity, means for returning unvaporized liquid directly to said heated portion, means for supplying liquid from said cooled portion to replace liquid vaporized in said heated portion, and means whereby liquid from said cooled portion condenses vapor from said heated portion.

1,882,120. MECHANICAL WATER COOLER. Edward C. Clifford, New York, N. Y. Filed Dec. 22, 1931. Serial No. 582,515. 4 Claims. (Cl. 62-141.)

1. A liquid cooler comprising a flat casing having a circular channel formed therein, a cover, a cooling coil located within the circular channel, a refrigeration system connected to the cooling coil, an inlet and an outlet in communication with the circular channel, and a thermostat in the circular channel and controlling operation of the refrigeration system.

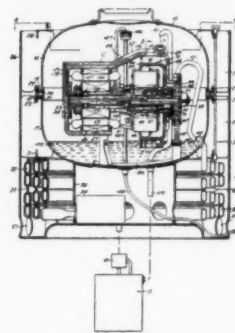
1,882,189. ICE PLANT. George W. Miller, Washington, D. C. Filed Aug. 19, 1931. Serial No. 558,112. 5 Claims. (Cl. 62-160.)

1,882,209. SHARP FREEZING STRUCTURE. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Co., Flint, Mich., a Corporation of Michigan. Filed Sept. 30, 1929. Serial No. 396,190. 9 Claims. (Cl. 62-126.)

2. A sharp freezing unit comprising a main body having a sharp freezing chamber, a front member for the unit, an opening in said front member registering with said sharp freezing chamber, and a closure plate, for said opening, contacting with and carried by said front member to seal the sharp freezing chamber, one of said contacting surfaces being formed of a non-metallic material to which ice does not readily adhere.

1,882,220. REFRIGERATOR SYSTEM AND APPARATUS. Arthur J. Kercher, Berkeley, Calif. Filed Jan. 23, 1929. Serial No. 334,571. 18 Claims. (Cl. 290-29.)

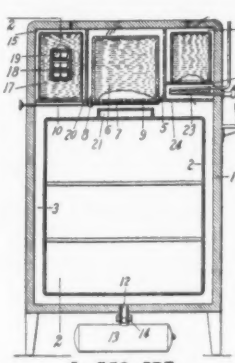
1. In a compressor, relatively rotatable parts, one of which is a cylinder structure, said structure having a cylinder bore and a fluid port communicating with the same, a piston disposed within said cylinder bore, and means mounted on said piston and mov-



1,882,220

able relative thereto for controlling the effective area of said port according to the relative speed of rotation between said parts.

1,882,237. REFRIGERATING APPARATUS. Burt H. Weston, Wood River, Ill. Filed April 9, 1928. Serial No. 268,745. 7 Claims. (Cl. 62-91.5.)



1,882,237

1. A refrigerator comprising a chamber adapted to receive a cake of solidified carbon dioxide, a food receptacle arranged beneath said chamber, passageways leading from said chamber about said food receptacle, a second chamber, a block of solidified carbon dioxide arranged within said second chamber and having a cavity to receive a substance which is to be frozen.

1,882,251. REFRIGERATING APPARATUS. Bo Folke Randel, San Diego, Calif. Filed June 19, 1929. Serial No. 372,081. 7 Claims. (Cl. 62-5.)

1. In a refrigerating apparatus, a circulating system containing a solution of a refrigerating medium in an absorption medium, means for causing said refrigerating medium to vaporize out of said absorption medium, means for condensing said vapor to liquid form, means for expanding said liquid to vapor form with resulting refrigeration effect, means for reabsorbing said expanded vapor into said absorption medium, thereby creating a low pressure on the refrigerating medium, communication means between said absorption means and said vaporizing means to allow liquid to flow from the latter to the former, other similar means to allow vapor to flow from the latter to the former, and a valve in said means to open by a float at the moment the pressures in said absorption means and said vaporizing means are substantially equalized.

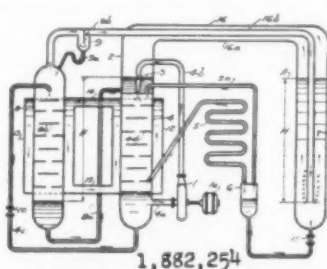
1,882,252. METHOD OF REFRIGERATION. Bo Folke Randel, San Diego, Calif. Filed Nov. 8, 1929. Serial No. 405,673. 22 Claims. (Cl. 62-119.5.)

18. A method of refrigeration which consists in producing a general circulation of a combination of mediums by the kinetic energy of a moving body of liquid, generating the motion of said body of liquid by an external force, and bringing a liquid refrigerating medium into the pressure of a supplementary gaseous medium in pressure proportions as to cause evaporation of the said liquid refrigerating medium.

1,882,253. MEANS AND METHOD OF REFRIGERATION. Bo Folke Randel, San Diego, Calif. Filed April 29, 1930. Serial No. 513,583. 12 Claims. (Cl. 62-119.5.)

6. A method of refrigeration, forming a maximum concentrated solution of a gas in a liquid by condensing vapors of the liquid in the presence of the said gas in predetermined volume proportions, then separating said absorbed gas from said solutions by bringing same in contact with a similar but less concentrated solution.

1,882,254. MEANS AND METHOD OF REFRIGERATION. Bo Folke Randel, San Diego, Calif. Filed Feb. 5, 1931. Serial No. 513,583. 12 Claims. (Cl. 62-119.5.)



1,882,254

9. In a refrigerating apparatus employing a cooling agent, a supplementary gaseous agent inert towards said cooling agent, and a liquid agent inert towards said cooling agent but capable of absorbing said supplementary gaseous agent, a generator, an evaporator, an absorber, a condenser, communication means between said generator, evaporator, absorber and condenser and mechanical means to cause circulation of said agents through said apparatus.

1,882,255. METHOD OF REFRIGERATION. Bo Folke Randel, San Diego, Calif. Filed Nov. 20, 1929. Serial No. 408,467. 8 Claims. (Cl. 62-179.)

7. That improvement in the art of refrig-

eration wherein a liquefied inert gas is forced through a liquid refrigerating agent to evaporate same forming a mixture of vapors; completely separating said inert gas from vapor of said refrigerating agent by condensing both to liquid state, said formed liquids being immiscible and of different specific gravities and wherein circulation of the mediums is caused by mechanical action.

1,882,256. MEANS AND METHOD OF REFRIGERATION. Bo Folke Randel, San Diego, Calif. Filed April 21, 1931. Serial No. 531,658. 10 Claims. (Cl. 62-169.)

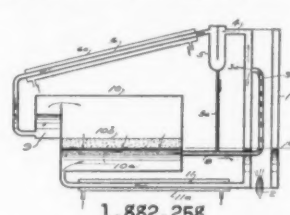
1. A method of refrigeration, the employment of a liquid column to compress a refrigerating medium and condensing said medium during compression, both compression and condensation taking place in a common chamber.

2. A method of refrigeration comprising raising a liquid motive medium to an elevated position, allowing the said liquid to fall to a lower position and to utilize the energy of the fall of the said liquid to cause circulation of a refrigerating medium from a lower to a higher pressure and condensing the said refrigerating medium during its compression.

1,882,257. MEANS AND METHOD OF REFRIGERATION. Bo Folke Randel, San Diego, Calif. Filed May 18, 1931. Serial No. 538,090. 7 Claims. (Cl. 62-169.)

1. A method of refrigeration comprising the removal of part of a liquid contained in a vessel, thus creating a space of lowered pressure in said vessel, evaporating part of the liquid remaining in said vessel into said space of lowered pressure with resultant absorption of heat, passing said produced vapor to a condensing space, liquefying said vapors and returning liquid to said vessel to make up for the evaporation in said vessel.

1,882,258. MEANS AND METHOD OF REFRIGERATION. Bo Folke Randel, San Diego, Calif. Filed Sept. 10, 1930. Serial No. 480,916. 9 Claims. (Cl. 62-119.5.)



1,882,258

2. A method of refrigeration comprising evaporating a refrigerant, passing the vapors produced through a space filled with an inert supplementary gas and thence through a permeable membrane, then absorbing said vapors in an absorption medium.

6. In a refrigerating apparatus of the absorption type, employing an inert pressure equalizing medium, an evaporator and an absorber, and a permeable division wall between said evaporator and said absorber.

(Continued on Page 7, Column 1)

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IN FIELD OF ELECTRIC REFRIGERATION

(Continued from Page 6, Column 5)

said permeable wall serving as a heat insulation, but permitting flow of refrigerant vapor from said evaporator to said absorber.

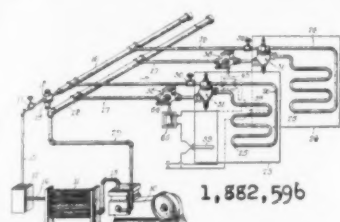
1,882,536. REFRIGERATOR. Carl Meyer Weinheimer, Buffalo, N. Y. Filed Nov. 5, 1930. Serial No. 439,499. 1 Claim. (Cl. 22-255.)

A door lock mechanism for cabinets having a toe receiving recess under the door, comprising a vertical reciprocable latch contained within the door frame and adapted to protrude into and retract from an orifice in the lower edge of the door, and a pivotally supported dependent latch actuating member extending into the toe receiving recess and swingable rearwardly towards the back of the recess to retract the latch from the orifice in the door.

1,882,537. AIR CONDITIONING APPARATUS FOR PASSENGER CARS. William B. Whitsett, Baltimore, Md. Filed May 4, 1931. Serial No. 534,995. 4 Claims. (Cl. 62-117.)

1. Apparatus for conditioning the air in a passenger vehicle comprising means for circulating refrigerant, a cooling compartment in the vehicle located above the level of the space occupied by the passengers, a surface cooler in the compartment receiving refrigerant from said means, said compartment having a recirculated air inlet in its bottom in direct open communication with the upper portion of the passenger space and having an air outlet, the said inlet and outlet being arranged for the horizontal flow of air in the compartment from said inlet and over the surface cooler to the outlet, and means located in said compartment between the cooler and the outlet for drawing air through the inlet and over the surface cooler and then forcing the air through the outlet over the space occupied by the passengers in said vehicle.

1,882,596. REFRIGERATING SYSTEM. George Hilger, Chicago, Ill. Filed Jan. 9, 1928. Serial No. 245,318. 7 Claims. (Cl. 62-3.)



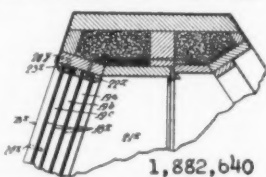
1. A refrigerating system comprising, in combination, a source of refrigerant, a plurality of refrigerating units, each comprising a refrigerating element, connected in parallel to said source, a back pressure reducing valve interposed in the discharge line from said source, said valve being automatically operable to make available a supply

of refrigerant at a substantially constant pressure to all of said elements, a plurality of additional valve means one interposed in the inlet of each element and responsive to the temperature of the refrigerant passing therethrough so as to automatically cut off the supply of refrigerant to said element when the temperature thereof falls below a predetermined point, and a plurality of additional valve means one interposed in the outlet of each element and automatically operable to close said outlet when the temperature of the space about said element falls below a predetermined point regardless of the temperature of the refrigerant.

1,882,597. REFRIGERATING SYSTEM. George Hilger, Chicago, Ill. Filed Jan. 21, 1928. Serial No. 248,283. 10 Claims. (Cl. 62-3.)

1. A refrigerating system having, in combination, a circulatory system including a compressor, a condenser, and a refrigerating element connected in series, the outlet of said element being connected to the suction side of said compressor, and temperature responsive means for supplying liquid refrigerant to the gas in the system at the suction side of said compressor.

1,882,640. REFRIGERATING AND DISPLAY APPARATUS AND METHOD. Charles



L. Jones, Pelham, N. Y., and Howard S. McIlvain, Belleville, N. J., assignors to Dryice Equipment Corp., New York, N. Y., a Corporation of Delaware. Filed April 26, 1930. Serial No. 447,499. 8 Claims. (Cl. 62-91.5.)

1. In a refrigerating apparatus the method of preventing moisture deposits, by means of the refrigerant, on refrigerator windows consisting of parallel plates with interspaces, which method includes sublimating solid carbon dioxide and discharging dry gas therefrom into the inner, coldest interspace and conducting the same serially through the successive interspaces, to the exterior atmosphere.

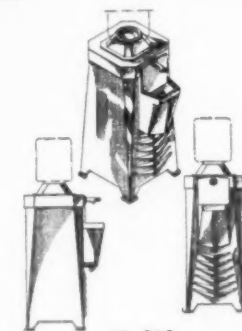
REISSUES

1,862,1. EVAPORATOR FOR REFRIGERATING SYSTEMS. Ransom W. Davenport, Detroit, Mich., assignor to Chicago Pneumatic Tool Co., New York, N. Y., a Corporation of New Jersey. Original No. 1,769,116, dated July 1, 1930. Serial No. 181,076, filed April 5, 1927. Application for reissue filed June 30, 1932. Serial No. 620,214. 18 Claims. (Cl. 62-126.)

18. In a refrigerating system the combination of a compressor and a condenser of an evaporator for liquid, means to feed refrigerant from said condenser into said evaporator, a second evaporator partly surrounding said first evaporator, a header to which said evaporators are connected, and means connecting said header and said compressor.

DESIGNS

87,902. BOTTLE-TYPE WATER COOLER. Stephen J. Benn, Philadelphia, Pa., assignor to Merchant & Evans Co., Philadelphia, Pa., a Corporation of Pennsylvania. Filed July 21, 1932. Serial No. 44,403. Term of patent 3½ years.



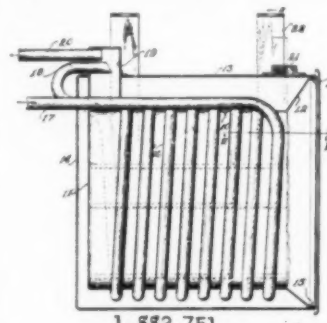
The ornamental design for a bottle-type water cooler as shown and described.

ISSUED OCTOBER 18, 1932

1,882,660. PROCESS FOR THE CONTINUOUS MANUFACTURE OF ICE CREAM AND SIMILAR FROZEN PRODUCTS. John J. Glauser, Pittsburgh, Pa. Filed Feb. 13, 1929. Serial No. 339,573. 4 Claims. (Cl. 62-174.)

1. The process of manufacturing ice cream and the like which consists in causing a continuous flow of the mass of material, agitating the mass during the first portion of said flow at a predetermined rate while subjecting said material thereafter at a higher rate but below the butter forming rate while still subjecting it to refrigeration.

1,882,751. FREEZER. Howard E. Blood, Detroit, Mich., assignor to Norge Corp., a Corporation of Michigan. Filed Feb. 27,



1928. Serial No. 257,168. 4 Claims. (Cl. 62-95.)

3. A device of the class described comprising

ing spaced receptacles in telescopic relation to afford a brine compartment therebetween and an evaporator coil in said compartment in contact with the outside of the inner receptacle, and a liquid trap inserted in said compartment and connected to the discharge end of said evaporator coil.

1,882,752. ELECTRIC REFRIGERATOR ASSEMBLY. Howard E. Blood, Detroit, Mich., assignor to Norge Corp., a Corporation of Michigan. Filed May 16, 1928. Serial No. 278,250. 9 Claims. (Cl. 62-116.)

1. A domestic refrigerating unit comprising a refrigerator casing having a compartment therebeneath with rear openings into both the casing and the compartment, a closure for said opening into the casing, a freezer unit mounted thereon, a channeled connecting member secured to said closure and extending downwardly behind said compartment, a compressor and condenser unit in said compartment, and supporting means attached to said connecting member for mounting said compressor and condenser unit in fixed relationship with the closure and freezer unit.

1,882,775. FREEZING TRAY. Ralph H. Chilton, Dayton, Ohio, assignor to The Inland Mfg. Co., Dayton, Ohio, a Corporation of Delaware. Filed Feb. 2, 1931. Serial No. 512,890. 4 Claims. (Cl. 62-108.5.)

1. A freezing tray for refrigerators comprising: a container adapted to hold water and a removable partition grid unit adapted to be set within said container to divide the frozen contents into a plurality of blocks, said grid having a plurality of parallel arranged hollow metal partitions open at the top edges thereof to permit easy circulation of cold air within said hollow partitions, and means extending across the tops of said hollow partitions to hold them in place but permit the opposite walls of a partition to flex inwardly.

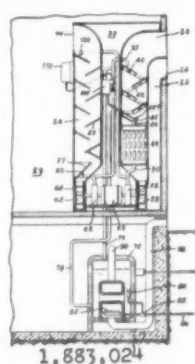
1,882,969. REFRIGERATING SYSTEM AND METHOD. Paul A. Scherer, Medford, Ore., and Grahame B. Ridley, San Francisco, Calif., assignors to Southern Oregon Sales, Inc., Medford, Ore., a Corporation of Oregon. Filed June 24, 1930. Serial No. 463,543. 3 Claims. (Cl. 62-104.)

2. In a system of the character described, a refrigeration space containing a medium to be cooled, brine recirculating means adapted to bring cool brine into heat absorbing contact with said medium, means for diverting a portion of said brine from said recirculating means and for returning the same to said means, means for heating said diverted brine portion out of contact with the atmosphere and means for subjecting the diverted portion to the atmosphere to evaporate undesired moisture prior to its return to said recirculating means.

1,882,979. REFRIGERATING APPARATUS. Warren H. F. Schmieding, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Ohio. Filed April 30, 1931. Serial No. 533,995. 9 Claims. (Cl. 62-126.)

2. In a refrigerating system of the type in which a body of liquid refrigerant is maintained in an evaporator and in which a layer of lubricant floats on the liquid refrigerant in the evaporator, the combination of an evaporator having a liquid refrigerant inlet opening, said inlet opening including a confined passage communicating with the body of liquid refrigerant within said evaporator and with the space above the lubricant floating on the liquid refrigerant.

1,883,024. REFRIGERATING OR AIR CONDITIONING APPARATUS. Harry F. Smith, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Nov. 29, 1930. Serial No. 499,026. 8 Claims. (Cl. 261-3.)



1. An apparatus for conditioning air in a room comprising an intake flue, a discharge flue communicating with said intake flue, said flues communicating with the atmosphere outside said room, means for circulating a hygroscopic liquid through said discharge flue, means in said discharge flue for imparting to said liquid a predetermined degree of concentration at substantially atmospheric temperature, said latter means comprising a steam conduit and means for cooling the liquid, an air treating zone for the air in the room, means for circulating the air in said room through said zone and means for contacting the concentrated liquid with said circulating air in said treating zone.

1,883,057. REFRIGERATION UNIT. Desider Stanyo, Milwaukee, Wis., assignor to The Vilter Mfg. Co., Milwaukee, Wis., a Corporation of Wisconsin. Filed Oct. 19, 1928. Serial No. 313,488. 5 Claims. (Cl. 62-135.)

5. A refrigerating unit comprising a casing having air inlet and outlet openings in opposite end portions thereof, a pair of headers spaced apart in said casing, refrigerant receiving means extending between and having end portions connected to said headers and means for causing a circulation of air from said inlet around the refrigerant receiving means and through said opposed outlet.

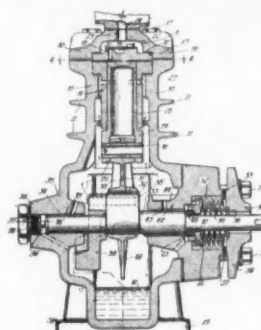
1,883,109. MOTOR AND PUMP ASSEMBLY FOR ICE CREAM FREEZERS. Emory Thompson, New Rochelle, N. Y. Filed June 3, 1931. Serial No. 541,935. 6 Claims. (Cl. 62-101.)

1. The combination with an ice cream freezer and stand therefor, of a base member

adjustably mounted within the stand at the bottom thereof to change the elevation of said member, means to adjust said base member and to rigidly maintain it in its adjusted position, a motor and a pump operatively connected with said motor mounted on said base member, and a flexible refrigerant conduit connected with said pump and freezer.

1,883,149. SLIDING REFRIGERATOR CAR DOOR. Axel Wasberg and Kenneth J. Tobin, Chicago, Ill., assignors to Camel Co., Chicago, Ill., a Corporation of Illinois. Filed Sept. 27, 1928. Serial No. 308,693. 9 Claims. (Cl. 20-24.)

1,883,328. COMPRESSOR. William H. Bihl and Axel Ramclaw, Chicago, Ill., assignors, by mesne assignments, to Zerozone, Inc., Chicago, Ill., a Corporation of Delaware. Filed Nov. 8, 1927. Serial No. 231,874. 4 Claims. (Cl. 230-172.)



1. In a compressor, a crank case, a base and a cylinder block all formed as integral parts of a unitary structure, the block having an inner annular shoulder adjacent its upper end, a cylinder having an outer annular flange at its upper end seating on said shoulder, a cylinder head seating on the upper end of the cylinder, a cylinder block head seating on the cylinder head and secured to the block, a piston operating in the cylinder, a crank shaft mounted in the crank case, and operating connections between said shaft and the piston.

1,883,329. REFRIGERATOR. William E. Bihl, Chicago, Ill., assignor, by mesne assignments, to Zerozone, Inc., Chicago, Ill., a Corporation of Delaware. Filed Dec. 9, 1929. Serial No. 412,730. 9 Claims. (Cl. 62-116.)

1. In a refrigerator, a cooling unit, a removable drip pan disposed below said unit and inclined with respect to it, means on one end of said pan and engaging said unit to hang the pan therefrom, means for supporting the other end of the pan, and means

in said pan for permitting a free flow of chilled air downward from said unit.

1,883,330. COMPRESSOR MOUNTING. William E. Bihl and Axel Ramclaw, Chicago, Ill., assignors, by mesne assignments, to Zerozone, Inc., Chicago, Ill., a Corporation of Delaware. Filed March 3, 1930. Serial No. 432,917. 8 Claims. (Cl. 248-16.)

1. In combination, a supporting member, a base disposed above the supporting member and provided with a downwardly opening socket, a cushion member secured to the supporting member and projecting into said socket to limit the lateral motion of the base on the supporting member, a cushion member disposed within the socket, and a cushion spring confined between the two cushion members for supporting the base upon the support, said spring being spaced away from the surrounding wall of the socket.

1,883,462. COOLING UNIT. Alvin H. Baer, Waynesboro, Pa. Filed July 28, 1931. Serial No. 553,633. 8 Claims. (Cl. 62-91.5.)

1. A cooling unit comprising an outer heat-conducting casing, an inner heat-conducting compartment for ice or the like, intermediate partitions respectively of heat-conducting and heat-insulating character providing a labyrinthine passage for non-freezing fluid between adjacent walls of said casing and said compartment, and means whereby circulation may be established either independently in different circuits of the labyrinth including one circuit having branch along a wall of the compartment and another having a branch along a wall of the casing, the totality of circuits being in heat-exchanging relation, or else a circulation may be established only in the innermost and the outermost branches of the labyrinth and passages leading directly from one to the other, substantially as set forth.

(Continued in Next Issue)

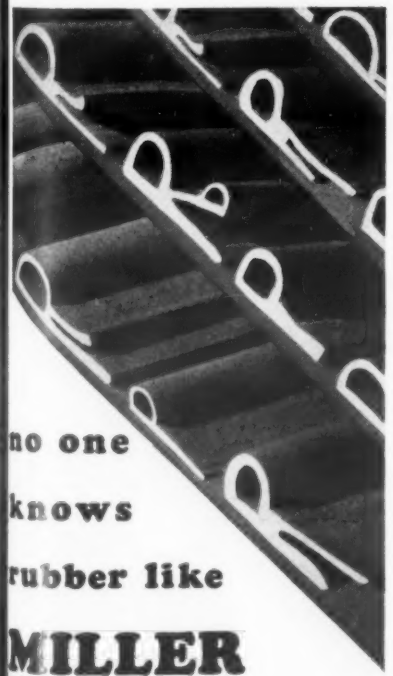
PERFECTION STOVE SUING ON ABSORPTION UNIT

CLEVELAND—A patent suit charging Montgomery Ward & Co. with infringement of patent No. 1,816,975 on absorption refrigerators using kerosene, was started on Oct. 14 when the Perfection Stove Co. filed bill in equity No. 4470 in the U. S. District Court, Northern District of Ohio, here.

Patent No. 1,816,975 was granted to David F. Keith, and assigned to the Perfection Stove Co. on Aug. 4, 1931.

The plaintiff asks that a writ of injunction be issued restraining the defendant from further alleged infringement, and requests that the defendant be required to pay damages. As yet no injunction has been issued.

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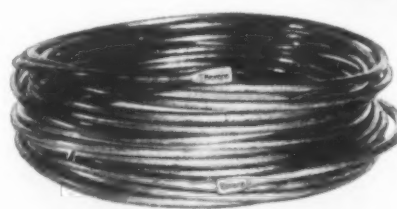
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